FOREWORD

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Volume 19 Issue 1 (2023)

NAVIGATING THE DIGITAL WAVE IN MODERN RETAIL: INSIGHTS AND IMPLICATIONS

Welcome to this new issue of the Retail and Marketing Review, a thoughtful exploration into the diverse and ever-changing spheres of consumer behaviour, digital integration, and retail strategies across a range of industries and regions. With a special focus on the African, Bangladeshi and German markets, this issue presents empirical studies and literature reviews to offer a comprehensive understanding of these subjects.

The inaugural article pinpoints the crucial factors influencing purchasing behaviour within Johannesburg's sports apparel market. This exhaustive research presents an invaluable guide, enabling businesses to competently navigate and compete in this strenuous environment. Moreover, practical recommendations emerge from the study. The focus in the next article then shifts to the importance of user-generated content in shaping consumer-based brand equity, with the spotlight on Cape Metropole's major retailers. It was found that user-generated content does indeed exert an influence on consumer-based brand equity. This offers an intriguing glimpse into the interplay between modern consumers and brand identities in our increasingly interconnected world. Carrying on the theme of branding in the digital realm, the influence of online sensory branding experiences on brand loyalty is explored. This groundbreaking research provides an understanding of the diverse online interactions that foster brand loyalty. Remaining in the digital realm another article empirically explores the influence of factors such as security, audio-visual quality, time-saving orientation, relative advantage, and trust on the intention to purchase from fast food websites in South Africa. Its findings show a positive correlation between the selected independent variables and purchasing intentions, underscoring potential implications for both academia and industry. The banking industry is drawn into the dialogue on the implications of the digital world in a study that investigates consumer adoption factors of chatbots within South Africa's banking industry. This topical exploration is set against the backdrop of the swift digital metamorphosis engulfing the financial sector.

Moving out of South Africa, the Bangladeshi online retail environment is discussed in an empirical study which assesses the factors that affect customers' online purchasing intentions. The insights from this burgeoning digital market could have implications for similar markets across the globe. A further article comprises a thoroughly composed review and meta-analysis on the critical retail service factors gleaned from literature. This amalgamation acts as a dense resource for industry stakeholders and academics, spotlighting the foundations of successful retail services.acts as a dense resource for industry stakeholders and academics, spotlighting the foundations of successful retail services.

Wrapping up this issue, a comparative study offers detailed insights into German customers perceived risks of purchasing Over The Counter (OTC) drugs from pharmacies at different degrees of digitalization compared to brick-and-mortar pharmacies. This analysis unveils the complex relationship between healthcare and digitalization, offering a fresh viewpoint on consumer risk perceptions and shows that customers prefer non-digitalized pharmacies for shopping and rate their risk as the lowest.

In sum, this issue presents a panoramic view of consumer behaviour and digital transformation across diverse industries and global landscapes. We trust that these scholarly contributions will spark inspiration and catalyse further dialogue on these significant topics.

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Factors influencing the purchasing behaviour of sports apparel consumers in Johannesburg

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ABSTRACT

The purpose of this paper was to determine the factors that influence the purchasing behaviour of Generation X and Y sports apparel consumers in Johannesburg. This was achieved by using the theory of planned behaviour. Understanding why customers buy specific products presents an opportunity for companies to design marketing communications strategies that will ensure more customer buying decisions. Quantitative research methods were used in this study. In total, 70 responses were obtained. Based on the proposed research model, subjective norms and perceived behavioural control were found to have a positive influence on attitude. Also, it was found that attitude has a positive influence on purchase intention. The study recommended that managers and marketers of sports apparel companies use experts in the field to run their promotional campaigns. Furthermore, they need to make it easy for their consumers to access sports apparel and provide them with enough information so that their consumption is informed by knowledge. Moreover, managers and marketers need to create favourable consumer attitudes towards their products or brands by using reputable celebrities to endorse them and genuinely engage in charitable initiatives.

Keywords: Consumer behaviour, Generation X, Generation Y, consumers, sports apparel, generational cohorts

The Retail and Marketing Review
Volume 19, Issue 1, June 2023, Pages 1-12
doi: https://doi.org/10.5281/zenodo.8210759

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INTRODUCTION

The factors underlying how and why people shop for specific products has been widely studied for many years (Bakewell & Mitchell, 2003). However, these studies have demonstrated that consumer behaviour is unpredictable and dynamic (Jin & Kim, 2003). Understanding why customers buy particular products presents an opportunity for companies to design relevant strategies that will increase customer buying decisions.

The study described in this paper investigated the factors influencing the buying behaviour of Generation X and Y sports apparel consumers in Johannesburg, South Africa. In recent years, the sports apparel industry has become a profitable business globally (Euromonitor International, 2014). According to Watts and Chi (2019), consumers are becoming more interested in healthy lifestyles, resulting in an increased demand for sports apparel that meets performance, functionality and style criteria. Furthermore, sportswear has become an ordinary part of people's wardrobes that goes beyond the gym.

The focus of the present study was on Generation X and Generation Y consumers because there is limited research on their buying behaviour in Johannesburg. For years, generational differences, especially between Generation X and Generation Y have been important subjects of academic research on consumer behaviour (Acar, 2014); Connor, Shaw & Fairhurst, 2008). There is no single definitive timeframe for Generations X and Y cohorts. However, Lissitsa and Kol (2016) refer to Generation X as those people born between 1961 and 1979, whilst Generation Y (sometimes referred to as millennials) are those born between 1980 and 1999. There are sometimes notable differences in the consumer behaviour of different generational cohorts that marketers need to be mindful of.

It is very important for clothing marketers to have sufficient knowledge of the many factors that influence consumer decisions in order to ensure successful product delivery and customer retention in the marketplace (Mafini & Dhurup, 2014). In addition, Maziriri, Chuchu and Madinga (2019) argue that retailers need to develop an understanding the factors that influence buyers when selecting a store from which to buy the products they seek.

PROBLEM STATEMENT

Owing to the competition amongst sports apparel companies, firms need to study consumer behaviour to understand the reasons behind consumer buying decisions so that they can meet customer needs and wants. The present study aimed to provide sports apparel companies with an understanding of the factors that influence consumer buying behaviour.

Previous studies of sports apparel consumption locally and internationally have paid little attention to the measurement of consumer decision-making trends (Mandhlazi, Dhurup, & Mafini, 2013); Mafini & Dhurup, 2014). In addition, there is insufficient research on the factors influencing the buying behaviour of Generations X and Y consumers in Johannesburg.

Moreover, Watts and Chi (2019) maintain that, despite the substantial growth in the use of sports apparel, not much research has been done on the determinants of sportswear consumption for casual wear. As pointed out in Chi and Kilduff (2011), there is still a gap in the literature in terms of exploring the purchase intention for sports apparel. This gap still exists in South Africa and more studies are needed to address it. Consequently, it is a worthwhile exercise to examine the factors that influence the attitudes and purchase intentions of South African consumers towards sport apparel, especially foreign brands (Dhurup, Muposhi, & Shamhuyenhanzva, 2015).

RESEARCH OBJECTIVES

The objectives of this study are to:

- Determine the factors that influence the buying behaviour of Generation X and Generation Y sports apparel consumers in Johannesburg.
- Determine which of the independent variables have significant relationships with attitude and purchase intention.
- Understand how marketers and managers can improve consumer purchase intention.

HYPOTHESES

From various literature sources like Putra, Hartoyo and Simanjuntak (2017); Min, Chang, Jai, & Ziegler (2019); Paul, Modi and Patel (2016) and Cristea and Gheorghiu (2016); Mubarok (2018) it was found that perceived product quality, brand image, subjective norms, and perceived behavioural control have a positive influence on consumer attitude. Watts and Chi (2019) further state that attitude has a positive influence on purchase intention.

Based on that knowledge, the following hypotheses were then developed to test these relationships between the variables:

H1 - Perceived product quality positively influences the attitudes of sports apparel consumers.

H2 - Brand image positively influences the attitudes of sports apparel consumers.

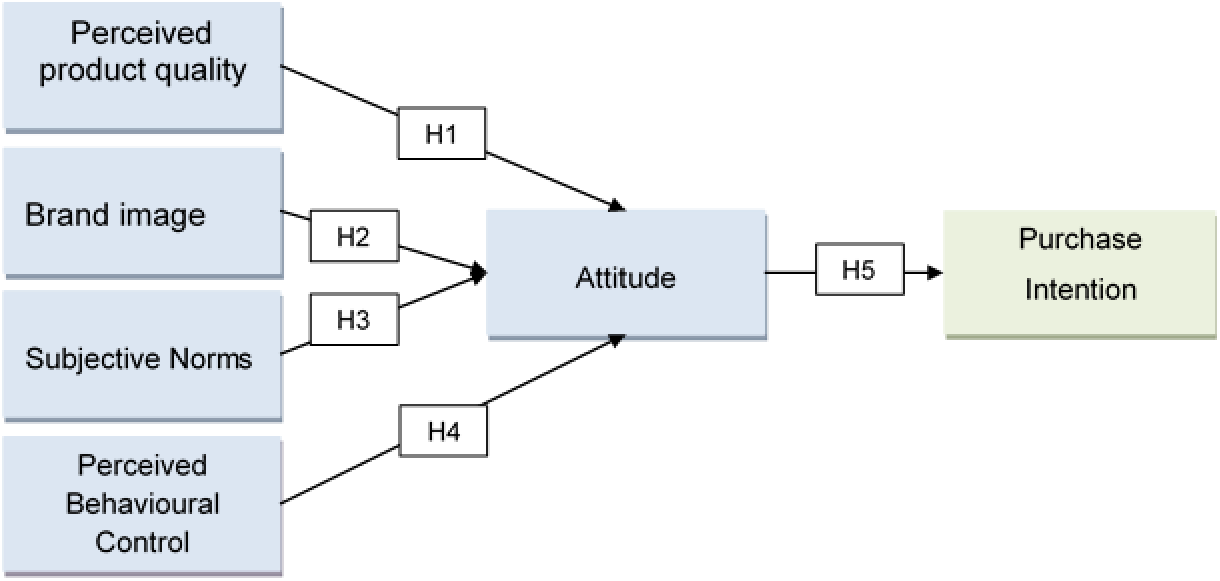
H3 - Subjective norms positively influence the attitudes of sports apparel consumers.

H4 - Perceived behavioural control positively influences the attitudes of sports apparel consumers.

H5 - Attitude positively influences the purchase intentions of sports apparel consumers.

Figure 1 below illustrates the proposed research model that was used in the study. In the end, the empirical results determined the viability of the model.

FIGURE 1: HYPOTHESISED RESEARCH MODEL



Source: Author’s own construct

LITERATURE REVIEW

THE CONCEPT OF CONSUMER BUYING BEHAVIOUR

A number of authors have defined consumer behaviour (also referred to as buyer behaviour) in the literature. According to Kotler and Armstrong (2017), consumer behaviour is the buying behaviour of final consumers who are the individuals and households that purchase goods and services for personal use. Consumer behaviour involves the psychological processes of buyers recognising and finding ways to meet their needs; interpreting information; and making and implementing plans (Furaiji, Łatuszyńska, and Wawrzyniak, 2012). These processes would lead to decisions about whether to buy a product, which brand to buy and where, which would be facilitated by comparing shopping options before making the purchase.

THE IMPORTANCE OF UNDERSTANDING CONSUMER BEHAVIOUR

It is important for companies to understand consumer behaviour if they want to attain commercial success (Furaiji et al., (2012). Furthermore, the relationship between the marketing strategy of a firm and consumer buyer behaviour depends on its management's understanding of this behaviour. As highlighted in Chi and Kilduff (2011), previous research has shown that there are misalignments between what companies believe their consumers value and what consumers actually value.

THE THEORY OF PLANNED BEHAVIOUR (TPB)

The present study used the TPB to predict the consumer purchase intention for sports apparel of Generations X and Y consumers in Johannesburg. This theory has been applied in a variety of areas, such as healthcare, environmentally friendly clothing in Zheng and Chi (2014) and various consumer goods for the prediction of consumer purchase intention and subsequent behaviour.

According to Watts and Chi (2019), the TPB proposes that an individual's behavioural intention is dependent on his/her attitude towards the behaviour, subjective norms and perceived behavioural control. The general rule is that the greater the intention to engage in a behaviour, the greater the likelihood that it will be done (Ajzen, 1991).

FACTORS INFLUENCING BUYER BEHAVIOUR

Perceived product quality – in broad terms, quality can be defined as excellence or superiority (Zeithaml, 1988). Studies by Boisvert and Ashill (2011), Aynadis (2014) as well as Putra et al. (2017) maintain that perceived product quality has a positive influence on consumer attitude.

Brand image – can be defined as the perceptions about a particular brand as reflected by the brand associations held in the memory of the consumer (Keller, 1993). Brand names have a significant effect on consumer choice of sportswear (Dickson & Pollack, 2000).

Subjective norms – are the result of perceived social pressure to perform a behaviour or not (Ajzen, 2015 and Kim & Chung, 2011). According to Kim and Karpova (2010), previous studies indicate a positive relationship between subjective norms and attitude.

Perceived behavioural control (PBC) – is the perceived ease or difficulty of performing a behaviour and is a reflection of experience as well as anticipated hurdles and hindrances (Ajzen, 1991). Previous studies have found that PBC has a positive influence on consumer attitude (Cristea & Gheorghiu, 2016) and purchase intention (Kim, Ham, Yang and Choi, 2013).

Attitude – is the extent to which an individual has a favourable or unfavourable evaluation or appraisal of the behaviour under consideration (Ajzen, 1991 and Kim & Chung, 2011). Studies by Zheng and Chi (2014) and Gopi and Ramayah (2007) found that attitude showed the most significant impact on consumer purchase intention.

Purchase intention – refers to a consumer's plan or willingness to buy a certain product or service in the future (Chiu, Chang, Cheng, & Fang, 2009). According to Hien, Phuong, Tran, & Thang, 2020), purchase intention is a reflection of the planned or predicted future behaviour of a consumer and indicates the probability that it will result in a buying behaviour.

RESEACH METHODOLOGY

TARGET POPULATION

This study was conducted in Johannesburg, South Africa. All persons aged between 18 and 59 years old were the target of this study.

SAMPLING SIZE

The respondents had to be Generation X and Y sports apparel consumers with buying power in Johannesburg. The participants had to be representative of the country's diverse population, so the researcher randomly selected people regardless of their gender; race; educational level; employment status; and income level. A total of 70 responses were obtained.

SAMPLING METHOD

Probability sampling, also known as random sampling, was used in this study. In particular, simple random sampling was used. In simple random sampling, every unit in the population has the same probability of selection (Vehovar, Toepoel, & Steinmetz, 2016).

The randomly selected participants included family, friends, colleagues and other members of the public in various areas within the city.

DATA COLLECTION

Primary data were used in the present study. The online survey method was used, because it was considered safe in light of COVID-19 risks. To collect the primary data for the study, a link to the e-survey was sent to the respondents electronically, and they had to complete it in their own time and at their own pace.

THE RESEARCH INSTRUMENT

A closed-ended questionnaire was used. The questionnaire consisted of two sections (A and B). Section A was mainly for demographic and consumer data. Section B consisted of the Likert scale questions. There were 40 questions, sourced from existing literature like Schnurr, Brunner-Sperdin, and Stokburger-Sauer (2017); Hakim and Susanti (2017); Hien et al., (2020); Watts and Chi (2019); Zheng and Chi (2014); Chi and Kiddulf (2011); Chiu, Kim and Won (2018); Ghafoor, Ahmed, Naeem and Huang (2018), as well as articles written by several authors who had studied some of the constructs included in the questionnaire. Only a few of the questions were constructed by the researcher.

The research instruments selected had, on average, a Cronbach's alpha of more than 0.7, which suggests that the questionnaires were reliable for the study (Nunally, 1978).

ETHICAL CONSIDERATIONS

All the respondents were above the age of 18. Informed consent was requested from the respondents prior to participation. The participants' right to privacy was respected. Their confidentiality and anonymity were also maintained. No personal information that could be used to identify the respondents was requested. The respondents were allowed to withdraw their participation at any stage. It was explained to the respondents that their participation was voluntary and that no benefit would accrue to them because of them participating in this study.

DATA ANALYSIS

The data were analysed using a computer software program called STATISTICA. Firstly, the data were analysed for reliability and validity. Thereafter, data analysis generated descriptive and inferential statistics.

DATA QUALITY

In order to ensure that the study was credible and of a good quality, the researcher had to adhere to certain principles. The Cronbach's alpha co-efficients for all the constructs were above 0.8, which indicated excellent reliability. The sample size of this study was small relative to the hypothesised model; therefore, the findings were only tested for face validity.

TABLE 1: CRONBACH'S ALPHA RESULTS

Construct	Cronbach's Alpha	Description
Perceived product quality	0,94	Excellent
Brand Image	0,90	Excellent
Subjective norms	0,87	Excellent
Perceived behavioural control	0,86	Excellent
Attitude	0,92	Excellent
Purchase intention	0,85	Excellent

RESULTS

This section presents the descriptive and inferential statistical findings of the study. Table 2 below shows that majority (60%; n = 42) of the respondents were female, with the dominant age group ranging from 30 to 39 years old, (59%; n = 41). Blacks were the dominant ethnic group (80%; n = 56). Most of the respondents (39%; n = 27) held a bachelor's degree, whilst only 13% (n = 9) had a postgraduate qualification. Most of them were employed (87%; n =61). In terms of monthly income levels, the majority (29%; n = 20) of those surveyed earned between R15 000 and R29 999. More than half of them (54%; n = 38) indicated that they were in favour of stores inside a shopping mall. Most of them (51%; n = 36) indicated that they bought sports apparel to participate in physical activities (like exercising).

TABLE 2: DEMOGRAPHIC PROFILE AND CONSUMER PREFERENCES/REASONS

Variable	Distribution	% Response	Number of respondents
Gender	Female	60%	42
	Male	40%	28
Age	18 – 29	29%	20
	30 – 39	59%	41
	40 – 49	9%	6
	50 - 59	4%	3
Race	Asian	0%	0
	Black	80%	56
	Coloured	6%	4
	Indian	6%	4
	White	9%	6
Highest education level	Below matric	1%	1
	Matric	11%	8
	Diploma	29%	20
	Bachelor’s degree	39%	27
	Postgraduate	13%	9
	Masters	7%	5
	Doctorate	0%	0
Employment status	Employed	87%	61
	Unemployed	4%	3
	Self-employed	6%	4
	Prefer not to say	3%	2
Monthly income level	R0 – R2 999	4%	3
	R3 000 – R7 999	1%	1
	R8 000 – R14 999	16%	11
	R15 000 – R29 999	29%	20
	R30 000 – R49 000	20%	14
	R50 000+	10%	7
	Prefer not to say	20%	14
Preferred option when buying sports apparel	Stores inside a shopping mall	54%	38
	Stores inside shopping centres	29%	20
	Stand-alone stores	11%	8
	Online stores	6%	4
Reasons for buying sports apparel	For participating in sports activities	9%	6
	For doing physical activities (like gym)	51%	36
	For casual wear	40%	28
	Total	**100%**	**70**

CORRELATION ANALYSIS

The results of the correlation analysis are presented in Table 3 below, where the relationships between the variables are illustrated.

TABLE 3: CORRELATION ANALYSIS

Variable	Correlations (Survey results) Marked correlations are significant at p < ,05000 N=70 (Case wise deletion of missing data)					
	PPQY	BRND	PBCL	SBNM	ATTD	PINT
PPQY	1,000	0,314	0,333	0,337	0,392	0,271
BRND	0,314	1,000	-0,003	0,421	0,154	0,211
PBCL	0,333	-0,003	1,000	0,130	0,412	0,355
SBNM	0,337	0,421	0,130	1,000	0,403	0,406
ATTD	0,392	0,154	0,412	0,403	1,000	0,584
PINT	0,271	0,211	0,355	0,406	0,584	1,000

NB: Items in red indicate significant relationships

Perceived product quality (PPQY) had a significant positive influence on attitude ($r = 0.392$, $p < 0.05$) and purchase intention ($r = 0.271$, $p < 0.05$). Brand image (BRND) was not significantly related to attitude ($r = 0.154$, $p < 0.05$) and purchase intention ($r = 211$, $p < 0.05$). Perceived behavioural control (PBCL) was significantly related to attitude ($r = 0.412$, $p < 0.05$) and purchase intention ($r = 0.355$, $p < 0.05$). The results showed that subjective norms (SBNM) had a significant positive influence on attitude ($r = 0.403$, $p<0.05$) and purchase intention ($r = 0.406$, $p<0.05$). The data analysis revealed that attitude had a strongly positive influence on purchase intention ($r = 0.584$, $p<0.05$). Multicollinearity was also not found to be a problem because the correlations between the independent variables were mostly less than 0.4. Wegner (2016) indicates that if correlations between the different pairs of independent variables are less than 0.4, multicollinearity does not adversely affect the predictive validity of the regression model.

MULTIPLE REGRESSION ANALYSIS

Table 4 below shows the results of multiple regression analysis of the relationship between the independent variables and attitude. The results indicated that perceived behavioural control (PBCL: $b = 0.310$; $p<0.05$) and subjective norms (SBNM: $b = 0.299$; $p<0.05$) were positively related to attitude. The other variables were not. The three independent variables explained 32% ($R^2 = 0.322$) of the movement of attitude.

TABLE 4: MULTIPLE REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN THE INDEPENDENT VARIABLES AND ATTITUDE

N=70	Regression Summary for Dependent Variable: Attitude (Survey results) R= ,567 R²= ,322 Adjusted R²= ,291 F(3,66)=10,448 p<,00001 Std. Error of estimate: ,563					
	Beta coefficient	Std. Error	B Coefficient	Std. Error	t value	p-value
Intercept			1,407	0,426	3,303	0,002
PPQY	0,189	0,113	0,135	0,081	1,666	0,101
PBCL	0,310	0,108	0,285	0,099	2,883	0,005
SBNM	0,299	0,108	0,248	0,089	2,778	0,007

NB: Items in red indicate significant relationships.

Table 5 below illustrates the multiple regression analysis of the relationship between the independent variables and both purchase intention and attitude. Subjective norms (SBNM: b = 0.217; $p<0.05$) and attitude (ATTD: b = 0.444; $p<0.05$) were positively related to purchase intention. The other variables were not. The four independent variables explained 39% ($R^2 = 0.394$) of the movement of purchase intention.

TABLE 5: MULTIPLE REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN THE INDEPENDENT VARIABLES AND BOTH PURCHASE INTENTION AND ATTITUDE

N=70	**Regression Summary for Dependent Variable: Purchase Intention (Survey results) R= ,628 R^2= ,394 Adjusted R^2= ,357 F(4,65)=10,567 p<,00000 Std.Error of estimate: ,534**					
	Beta coefficient	**Std. Error**	**B Coefficient**	**Std. Error**	**t value**	**p-value**
Intercept			1,105	0,436	2,532	0,014
PPQY	-0,027	0,110	-0,019	0,079	-0,248	0,805
PBCL	0,153	0,109	0,140	0,099	1,405	0,165
SBNM	0,217	0,108	0,179	0,089	2,000	0,050
ATTD	0,444	0,117	0,443	0,117	3,788	0,000

NB: Items in red indicate significant relationships.

Table 6 below presents the results of the multiple regression analysis of the relationship between the independent variables and purchase intention. Perceived behavioural control (PBCL: b = 0.290; $p<0.05$) and subjective norms (SBNM: b = 0.350, $p<0.05$) were positively related to purchase intention. The other variables were not. These three independent variables explained 26% ($R^2 = 0.260$) of the movement of purchase intention.

TABLE 6: MULTIPLE REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN THE INDEPENDENT VARIABLES AND PURCHASE INTENTION

n = 70	**Regression Summary for Dependent Variable: Purchase Intention (Survey results) R= ,510 R^2= ,0.260 Adjusted R^2= ,227 F(4,65)=7.740 p<,000 Std. Error of estimate: ,586**					
	Beta coefficient	**Std. Error**	**B Coefficient**	**Std. Error**	**t value**	**p-value**
Intercept			1,728	0,443	3,897	0,000
PPQY	0,056	0,118	0,040	0,084	0,478	0,634
PBCL	0,290	0,112	0,266	0,103	2,585	0,012
SBNM	0,350	0,112	0,288	0,093	3,108	0,003

NB: Items in red indicate significant relationships.

The results above indicate that perceived product quality and brand image had no significant positive influence on attitude. This means that H1 and H2 are not supported. Subjective norms and PBC have a significant positive influence on attitude, which means that H3 – H4 are supported. Also, attitude is positively related to purchase intention, which supports H5.

CONCLUSION

In the study, it was empirically found that brand image and perceived product quality have no significant influence on attitude, meaning that enhancing them will not have a significant impact on attitude. This requires further investigation as it is incongruous to many previous studies. Subjective norms and PBCs have a positive influence on the purchase intention of sports apparel consumers. Promoting subjective norms and PBC will positively improve consumer attitude. It can also be concluded that promoting consumer attitude will enhance purchase intention. Managers and marketers can consider using sports celebrities to advertise their products. Chew and Leng (2016) indicate that sports celebrity endorsements have a positive influence on consumer behaviour. The management of sports apparel companies should make sure that it makes it easy for consumers to access products. Watts and Chi (2019) suggest that managers could use a variety of sales channels to ensure that targeted consumers access apparel easily and conveniently. Furthermore, in their marketing communications, managers should create a perception of affordable prices through discounts, advertisements and the introduction of innovative products. The management of sports apparel companies needs to focus its marketing communications strategies on ensuring that the creation of a favourable consumer attitude towards the firms' products. Many people appear to have a favourable attitude towards buying sports apparel and are keen to purchase it, which is good for the management of sports apparel companies. With this in mind, managers must ensure that they adequately advertise their products to entice more consumers to buy them. They can use social media, such as YouTube, Facebook and Instagram, and other platforms, such as television, radio and sports newspapers or magazines, to promote existing products, new products and upcoming ones. They can also angage in charitable

Overall, the study made three contributions to the literature. Firstly, it confirmed the applicability of the TRA and TBP to research on Generations X and Y sports apparel consumers in Johannesburg. Marketers could use this information in studying consumer buying behaviour in respect of other products. Secondly, since this study was focussed on Generations X and Y, the proposed model could be extended to other generational cohorts and in other geographical areas. Lastly, the measuring instrument used was found to be valid and stable, which would make it useful for future researchers when conducting similar studies.

LIMITATIONS AND FUTURE STUDIES

The present study had a number of limitations. The sample size was relatively small and may not be representative of the general population. This study can therefore not be generalised to the broader population. The study was only conducted in Johannesburg, which excluded consumers from other towns/cities. Future research could look at carrying out a similar study in other cities and across the nine provinces of South Africa. A qualitative approach can also be adopted in order to probe deeper into the phenomenon, and thus gain more understanding about the subject. Other researchers could consider studying consumer purchasing behaviour in relation to specific brands. In the future, researchers could also look at different industries/products in order to gain more knowledge about consumer behaviour.

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The effect of user-generated content on consumer-based brand equity of major retailers in the Cape Metropole

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ABSTRACT

Negative and positive views on service and brand quality are generally shared on various social media platforms and are categorised as user-generated content (UGC). Both negative and positive UGC can either damage or enhance a company's reputation or consumer-based brand equity, and this may ultimately have an impact on the organisation's financial performance. This study sought to examine whether UGC does influence consumer-based brand perceptions, and if so, to determine whether negative or positive UGC exerted the most influence on these perceptions. The data for the study was collected using a mono-method quantitative research approach, which included a sample of 513 Generation Y respondents who completed self-administered online questionnaires distributed using Survey Monkey. Data analysis was based on both descriptive and regression models using SPSS version 27. As its major result, the study found that UGC does exert an influence on consumer-based brand equity, while positive UGC exerted a more significant influence than negative UGC. Similarly, both positive and negative UGC had an influence on other brand equity elements, such as brand credibility, brand loyalty and purchase intentions. From a policy perspective, it is imperative for companies to implement strategies or interventions in the form of promotional and information campaigns that enhance positive UGC while at the same time countering negative UGC that is damaging to the business.

Keywords: user-generated content, Generation Y, consumer-based brand equity, response strategies, communication strategy and secondary brand associations.

INTRODUCTION

By definition, brand equity is classified into two broad categories either from a financial or from a consumer perspective (Vinh, 2017:177). The consumer-based brand equity (CBBE) framework, where the brand value is based on perceptions that are formulated in the mind of the consumer, is more popular than the former category (Winit & Kantabutra, 2022:6). Proponents of this framework argue that brands no longer have complete control over CBBE (Arya et al.,2022:1384), as this one-way process has evolved significantly into a two-way process (He & Zhang, 2022; Ali et al.,2019:150).

Consumers are now generating their own content based on experiences and perceptions, referred to as user-generated content (UGC), and this has disrupted the traditional marketing ecosystem (Park & Lee, 2021:2). Ultimately, brand communication is no longer confined solely to the business-to-consumer interface because of the influence of UGC (Bolton et al., 2019:28). This implies that the balance of communication power is shifting to the consumer end of the marketing channel, since firms are no longer in control of consumer-driven communication activities (Arya et al., 2022:1393). UGC makes the control and measurement of CBBE rather complex, as it is consumer-based and founded on perceptions and human emotions, which ultimately affect purchase intentions (Mayrhofer et al., 2020:173).

Studies that have been conducted to determine the influence of UGC on CBBE include Eusebius (2020), Mishra (2018), Rachna & Khajuria (2017) and Schivinski et al. (2016). Most of these studies were purely qualitative, focused on financial aspects of brand equity and were conducted in regions other than Africa, while very little research on this phenomenon has been conducted on the African continent. In particular, studies pertaining to UGC's influence on CBBE in Africa which are specific to the retail industry are significantly less prevalent (Naeem & Wilson, 2020; Colicev et al., 2018). Using the Generation Y cohort, our study contributes to the body of knowledge by focusing on the CBBE perspective of major retail brands within the Cape Metropole of the Western Cape region of South Africa, which has the second largest concentration of retail businesses in the country (W&R WSP/ATR data, 2020/2021). By definition, Generation Y members are active online users who belong to the age group between 21 and 40 who are conversant with the use of internet-based technologies such as Facebook, Twitter, Instagram and WhatsApp.

LITERATURE REVIEW

The consumer revolution within the retail sector is currently a very real challenge as retailers battle to deal with the influence of UGC on CBBE. The Wholesale and Retail Sector Skills Plan (W&R SETA, 2021) attributes the key drivers of this revolution to the rapid adoption by consumers of smart mobile devices and digital media, and the following extract encapsulates the changes in the sector: “Gone are the days when a bad shopping experience remains isolated to a customer's circle of friends and family” (W&R SETA, 2021). Many retailers are still unclear on how to adapt their communication strategies around the prevailing increase in UGC, and they continue to pursue a firm-generated content (FGC) approach that is unidirectional, despite its waning effectiveness (Donthu et al., 2021:769). With UGC's influence on consumer perspectives, CBBE is being affected, and impacting on the brand equity of retail brands.

BRAND EQUITY

Brand equity is a concept that originates from the 1980s (Lassar et al., 1995:11; Park & Srinivasan, 1994:271) and has been the subject of numerous and often varied definitions, often dependent on the perspective from which the concept has been defined (Baalbaki & Guzmán, 2016:33). Brand equity is commonly defined as the attachment of greater value, higher levels of loyalty and increased confidence in a brand compared to competing brands (Winit & Kantabutra, 2022:6; Anabila, 2020:232). It also elicits the willingness of brand loyal consumers to pay more for the brand, relative to competing brands (Castillo et al., 2022:75; Lim et al., 2020:929). Due to the increasing prevalence of UGC, companies are gradually losing control over their brands and reputations online (Chelliah et al., 2022:425).

USER-GENERATED CONTENT (UGC)

A key finding in a study by Rachna and Khajuria (2017:7) is that UGC can influence CBBE both positively and negatively. Positive UGC that is created by online users, and that contributes to high levels of engagement, seemingly has the most significant influence on CBBE (Arya et al., 2022:1392; Mishra, 2019:396). Ho-Dac et al. (2013:48) argue in their study that negative UGC only adversely affects the CBBE of weaker brands. Tang et al. (2014:43) in their frequently cited study assert that UGC, specifically mixed-neutral and indifferent-neutral UGC, simply serve to exaggerate and reduce the effect of both positive and negative UGC respectively.

Eckes (2016:32) posits that negative UGC has a negative effect on CBBE and can be regarded as more influential than the marketing mix elements. Rachna and Khajuria (2017:7) suggest that UGC needs to be integrated into the marketing strategy of businesses due to its influence on CBBE (Schivinski, 2019:599). Buzeta et al. (2020:94) and Wouters (2016:6) elucidate that both negative and positive UGC alter CBBE, while negative UGC has the greatest influence on CBBE and significantly damages brand reputations, the effects of which are lasting and formidable (Wouters, 2016:6). Lwin (2022:96) and Rachna and Khajuria (2017:7) assert that marketers need to focus and react swiftly when dealing with negative UGC in particular, using both their marketing and branding strategies to negate the influence of negative UGC on CBBE (Buzeta et al., 2020:94).

PROBLEM STATEMENT

Many retailers are uncertain on how to adapt their communication strategies around the increase in UGC, and the interaction between online consumers and retailers presents numerous challenges for them (Stackla, 2019). There is also a decrease in the ability of traditional marketing approaches to influence consumer decision-making and brand perceptions, as consumers are more trusting of UGC and social media as a source of information (Arya et al., 2022:1392; Stackla, 2019) as opposed to traditional media sources. Therefore, a greater likelihood exists that consumers will be influenced by UGC as opposed to FGC, especially from sources that are familiar to them when making purchasing decisions (Mayrhofer et al., 2019:173; Ahn et al., 2014:43). As the volume of both positive and negative UGC is steadily increasing, thus altering CBBE, the study endeavoured to determine whether positive or negative UGC has an effect on the CBBE of consumers, or none at all.

HYPOTHESIS

In line with the above discussion and with specific reference to the findings of Schivinski and Dąbrowski (2013) and Christodoulides et al. (2012), the following hypotheses were developed:

H1: UGC has a positive influence on the CBBE of major retail businesses in the Cape Metropole.

Studies outlined in the literature review above suggest that a correlation exists between UGC and CBBE. Schivinski et al. (2016:202) and Bruhn et al. (2012:770) displayed evidence of the positive influence of UGC on CBBE dimensions.

This study therefore hypothesised that UGC exerts a positive influence on the CBBE of retail businesses in the Cape Metropole. As the influence of UGC on CBBE can be both positive or negative, the following hypothesis was also developed:

H2: UGC has a negative influence on the CBBE of major retailers in the Cape Metropole.

UGC can be either positive or negative: while positive UGC emanates from positive consumer experiences, negative UGC originates from unsatisfactory consumer experiences (Hornik et al., 2015:273). Estrella-Ramon et al. (2019:8) confirm that negative UGC has a negative effect on brand attitudes, which negatively influences CBBE.

As this study hypothesised that UGC can exert either a positive or a negative influence on the CBBE of retail businesses in the Cape Metropole, the following null hypothesis has been developed:

H0: UGC does not influence the CBBE of major retail businesses in the Cape Metropole.

Limited literature exists in which the influence of mixed-neutral UGC on CBBE has been measured (Tang et al., 2014:43). Bruhn et al. (2012:782) assert that UGC by its very nature can be regarded as a neutral form of communication, as it is seemingly mostly devoid of any firm influence.

CONCEPTUAL FRAMEWORK

The user-generated communication framework (UGCF) model shown in Figure 1.1 was used as the conceptual framework of this study to illustrate the relationship between UGC and CBBE within the retail industry. The conceptual framework is based on two main variables with UGC being the independent variable as it is theoretically assumed to have a causal effect on CBBE and has been confirmed in studies done in other regions. UGC is also regarded as a form of communication that is out of the ambit of control of the company, hence its classification as an independent variable (Schivinski et al., 2016:190). As CBBE is the primary variable of interest, it is affected by variances in the composition of UGC, i.e., negative or positive. Thus, CBBE is regarded as the dependent variable (Saunders et al., 2019:190). A sample size of 513 was used to assess the causal relationship between these two variables (Hallgren et al., 2018:12).

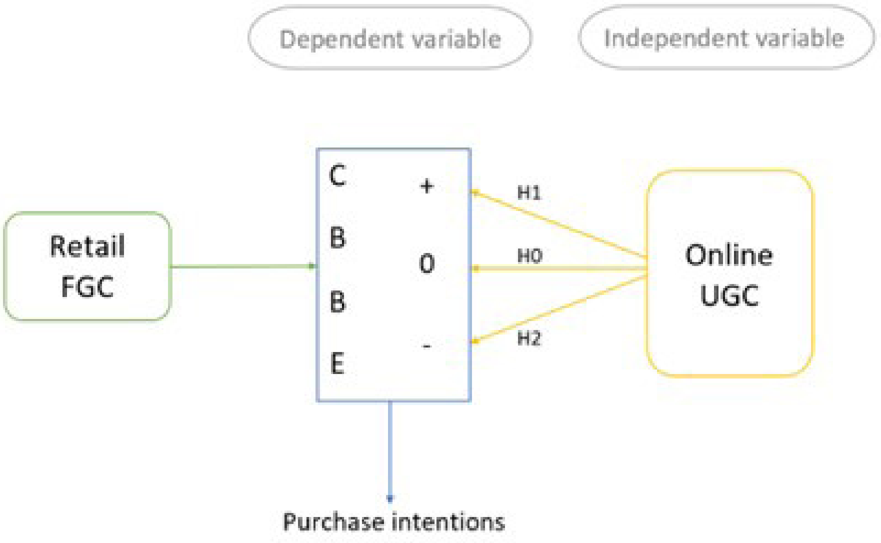


FIGURE 1: USER-GENERATED COMMUNICATION FRAMEWORK (UGCF)

RESEARCH METHODOLOGY AND DESIGN

A mono-method research methodology was used for this study (Saunders et al., 2019:179), with the adoption of a probability sampling technique, which aligned well with previously executed brand equity studies (Hussain & Ahmed, 2020). The use of the survey method as a research strategy for this study was well justified, as it is highly versatile for collecting primary data (Cooper & Schindler, 2011:243). The survey strategy is also well suited for collecting large amounts of information on motives, opinions, attitudes and intentions of both consumers and enterprises (Saunders et al., 2019:193).

The target population for this study was composed of members of Generation Y who are online shoppers, active on social media, and reside in the Cape Metropole.

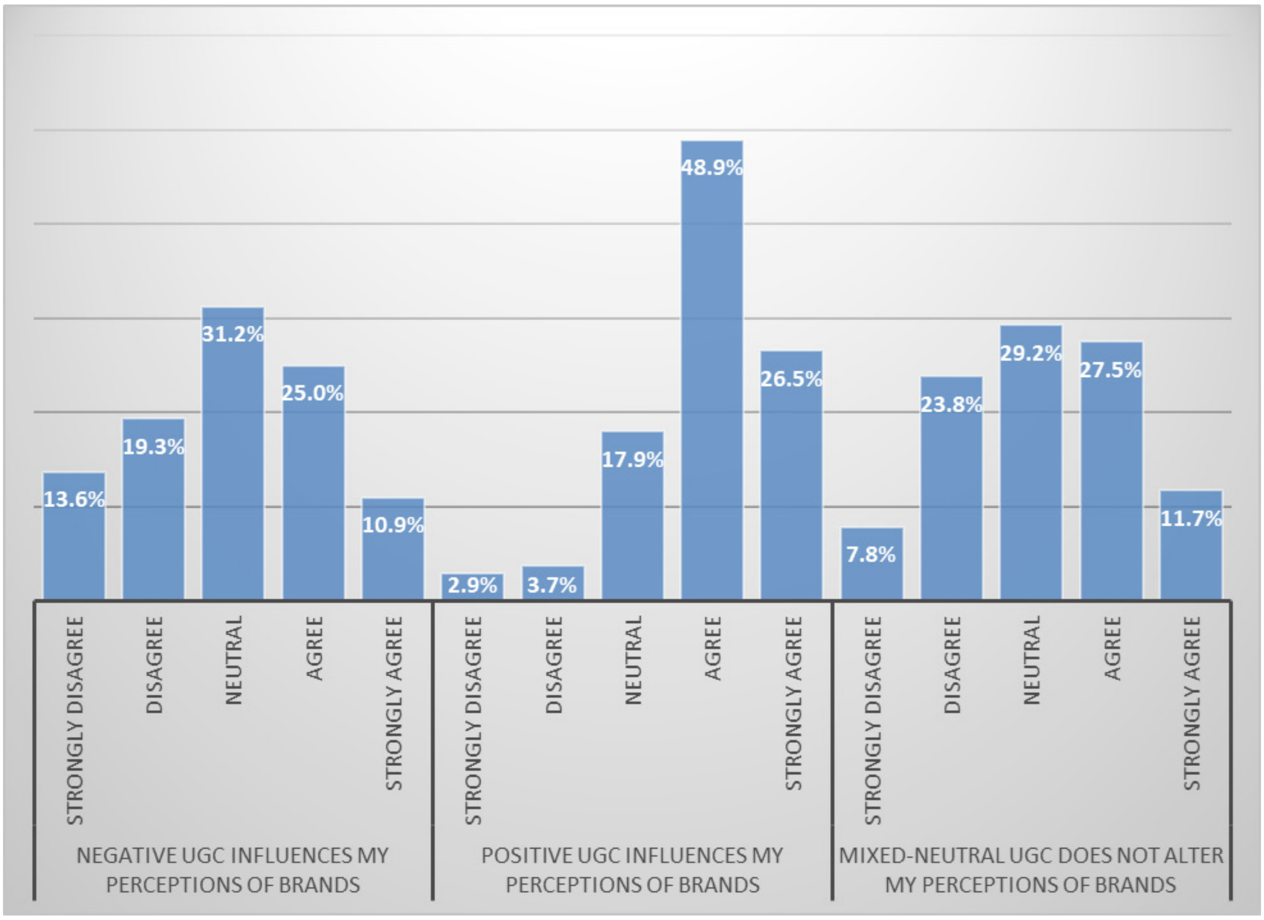
The sampling frame for this quantitative study was drawn from a database consisting of 40 000 respondents which was procured from a commercial syndicated market research company. The database is robust, demographically representative, and is the largest in South Africa. Database members are not self-selected, and a rigorous recruitment and registration process is maintained. Pre-screening of respondents was conducted. Through the manipulation of data in line with the pre-qualifying criteria of the sampling unit, a sample of 513 respondents was drawn.

The study used a questionnaire to collect data.

The primary data collected during the study was analysed using both descriptive statistics such as mean, standard deviation, correlation analysis and chi-square measure of association, and regression analysis using SPSS version 27. The dimensions of CBBE were measured using descriptive statistics and the influence of UGC on CBBE was measured using regression analysis techniques (Maslikhan, 2019:149).

FINDINGS

The frequency distribution of the influence of positive UGC on CBBE in Figure 1 below shows that 75.4% of the respondents were of the opinion that UGC positively influenced their brand perceptions.



Source: Survey data

FIGURE 2: INFLUENCE OF UGC ON CBBE

A total of 35.9% of respondents indicated that UGC negatively influenced their perceptions of brands. This represents a significantly lower influence on CBBE relative to the influence of positive CBBE. This indicates that the relationship between consumers and retail brands is being negatively affected, resulting in the breakdown of trust and credibility between brands and consumers. Additionally, it implies the viral speed with which negative UGC spreads and further comprises brand equity.

The influence of neutral UGC on CBBE displayed a higher tendency of 39.2%, This high tendency suggests that respondents indicated that UGC has no effect on CBBE.

TABLE 1: POSITIVE, NEGATIVE AND MIXED-NEUTRAL UGC INFLUENCE ON BRAND PERCEPTIONS OF MAJOR RETAIL BUSINESSES

Factor Matrix	Positive UGC		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree + Strongly agree	Factor loadings
1.1	UGC positively influences my perceptions of brands	N	15	19	92	251	136	387	0,738
		%	2.9%	3.7%	17.9%	48.9%	26.5%	75.4%	
1.2	Positive UGC (brand reviews) relating to brand being reliable, results in my forming positive perceptions	N	3	3	27	192	162	354	0,796
		%	0.8%	0.8%	7.0%	49.6%	41.9%	91.5%	
1.3	Positive UGC (brand reviews) relating to brand performance, results in my forming positive perceptions	N	1	3	33	201	149	350	0,794
		%	0.3%	0.8%	8.5%	51.9%	38.5%	90.4%	
1.4	Positive UGC relating to positive service experiences influences my purchasing decisions	N	2	3	38	178	166	344	0,788
		%	0.5%	0.8%	9.8%	46.0%	42.9%	88.9%	
1.5	Positive UGC (pictures) influences my purchasing choices significantly	N	2	9	43	179	154	333	0,766
		%	0.5%	2.3%	11.1%	46.3%	39.8%	86%	
Factor matrix	**Negative UGC**		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Agree + Strongly agree**	**Factor loadings**
2.1	UGC negatively influences my perceptions of brands	N	70	99	160	128	56	184	0,469
		%	13.6%	19.3%	31.2%	25%	10.9%	35.9%	
2.2	Negative UGC (brand reviews) relating to brand being unreliable, results in my forming negative perceptions	N	1	14	30	93	46	139	0,664
		%	0.5%	7.6%	16.3%	50.5%	25.0%	75.5%	
2.3	Negative UGC (brand reviews) relating to poor brand performance, results in my forming negative perceptions	N	5	5	19	104	51	155	0,711
		%	2.7%	2.7%	10.3%	56.5%	27.7%	84.2%	
2.4	Negative UGC relating to poor service experiences influences my purchasing decisions	N	1	12	19	87	65	152	0,722
		%	0.5%	6.5%	10.3%	47.3%	35.3%	82.6%	
2.5	Negative UGC pictures influence my purchasing choices significantly	N	0	10	26	94	54	148	0,733
		%	0.0%	5.4%	14.1%	51.1%	29.3%	80.4%	

Factor matrix	No influence		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agree + Strongly agree	Factor loadings
3.1	Mixed neutral UGC does not alter my perception of brands	N	40	122	150	141	60	201	0,758
		%	7.8%	23.8%	29.2%	27.5%	11.7%	39.2%	
3.2	UGC (pictures) has no influence on my purchasing choices	N	11	17	31	88	54	142	0,806
		%	5.5%	8.5%	15.4%	43.8%	26.9%	70.6%	
3.3	UGC (video clips) has no influence on my purchasing choices	N	7	21	27	92	54	146	0,861
		%	3.5%	10.4%	13.4%	45.8%	26.9%	72.6%	
3.4	My overall opinion regarding the quality of the brand is not influenced when exposed to UGC	N	8	14	39	89	51	140	0,845
		%	4.0%	7.0%	19.4%	44.3%	25.4%	69.7%	
3.5	The overall image I have of the brand is not altered when exposed to UGC	N	5	12	31	100	53	153	0,869
		%	2.5%	6.0%	15.4%	49.8%	26.4%	76.1%	

POSITIVE UGC

With specific reference to the frequency of the statements relating to the influence of positive UGC on brand perceptions, a high degree of generality exists whereby the majority of the respondents either agreed or strongly agreed with the statements (Table 1). The highest propensity (91.5%) related to brand reliability and the formation of positive perceptions. This was followed by 90.4% of respondents who agreed that positive UGC in the form of brand reviews relating to brand performance resulted in their forming positive perceptions.

86% of respondents indicated that positive UGC altered their purchasing choices significantly. With specific reference to the frequency of the statements relating to the influence of positive UGC on brand perceptions, a high degree of generality exists whereby the majority of the respondents either agreed or strongly agreed with the statements. The propensity of UGC positively influencing perceptions (75.4%) represents the formation of positive perceptions; these positive perceptions are a significant indication and a summation of the tendency that UGC does alter the perceptions of consumers and therefore CBBE.

NEGATIVE UGC

With regard to the frequency of statements relating to the influence of negative UGC on CBBE, for participants who responded that negative UGC negatively influenced their brand perceptions, poor brand performance and poor service experiences displayed the highest tendency at 84.2% and 82.6% respectively. Pictures displaying negative imagery also reflected a strong tendency and displayed a notable influence on purchasing behaviour, with 80.4% of respondents indicating that pictures do alter their purchasing intentions. Negative brand reviews displayed an equally strong disposition, with 75.5% of respondents indicating that they form negative perceptions when exposed to negative reviews about the brand’s performance. The statement measuring the influence of negative UGC on perceptions displayed the lowest propensity at 35.9%, which could be attributed to the highest neutral score of 31.2% of all the neutral variables.

MIXED-NEUTRAL UGC

Additionally, the statements relating to mixed-neutral UGC having no influence on brand perceptions displayed a strong propensity in favour of the agreed or strongly agreed variables. The statement that the overall image that respondents had of a brand is not altered when exposed to mixed-neutral UGC displayed the highest tendency of 76.1%. Mixed-neutral UGC in the form of video clips (72.6%) and pictures (70.6%) had no influence on perceptions, while 69.7% of respondents revealed that their overall opinion regarding the quality of the brand was not influenced when exposed to mixed-neutral UGC.

Overall, the highest tendencies were reflected in the influence of the positive UGC variables on consumer perceptions, with positive brand reviews relating to reliability and performance displaying the highest tendencies of 91.5% and 90.4% respectively. The most significant tendencies were therefore displayed by the influence of positive UGC, which was followed by negative UGC, then mixed-neutral UGC. These high frequencies are an indication that for this group of respondents, positive UGC had a significant effect on the CBBE of consumers, which positively impacted on the brand equity of major retail businesses.

Cronbach's Alpha scores were used to determine the internal consistency and reliability of the three constructs, and as scores for the three constructs – the influence of positive, negative, and mixed neutral UGC on CBBE – were 0.943, 0.948 and 0.891 respectively, the internal consistency was deemed to be robust and acceptable.

The factor loadings calculated to determine patterns of correlation between the variables displayed a factor loading above 0.5, with the exception of three variables, which were not eliminated from the study, as the majority of the variables displayed a high factor loading. The measurement device used in this study therefore displayed acceptable levels of convergent validity. The results of the one-sample Wilcoxon signed rank test are presented in Table 2 below.

TABLE 2: WILCOXON SIGNED RANK TESTS

Variables	One-Sample (test value = 3)		Related samples	
	p-value	Conclusion	p-value	Conclusion
Negative UGC influences my perceptions of brands	0.04	Different (>)	0.00	Positive
Positive UGC influences my perceptions of brands	0.00	Different (>)		
Negative UGC influences my perceptions of brands	0.04	Different (>)	0.02	Negative
Mixed-neutral UGC relating to a brand does not alter my perceptions of a brand	0.02	Different (>)		
Positive UGC influences my perceptions of brands	0.00	Different (>)	0.00	Positive
Mixed-neutral UGC relating to a brand does not alter my perceptions of a brand	0.02	Different (>)		

For the variable that UGC does have a positive influence on the CBBE of retail businesses in the Cape Metropole, the p-value is 0, which is less than 0.05. The mean and median for this statement are greater than 3, which is an indication of a positive influence of UGC on brand perceptions. Similarly, there is support that UGC has a negative influence on the CBBE of retail businesses in the Cape Metropole. The p-value of the negative UGC variable in Table 2: Wilcoxon signed rank tests is 0.04, which represents a lower value in relation to the statistical level of 0.05, indicating a less significant influence on CBBE in relation to positive UGC. The p-value of the mixed neutral variable is 0.02 which is also less than 0.05, and therefore represents statistical significance in terms of mixed-neutral UGC having no effect CBBE.

The results of the Wilcoxon matched-pairs test show that the influence of positive UGC on CBBE is statistically different from the negative influence of UGC on CBBE, as well as the influence of mixed-neutral UGC on CBBE, revealing that positive UGC influences CBBE more significantly than does negative UGC, while the lack of influence of mixed-neutral UGC on CBBE is noteworthy.

REGRESSION ANALYSIS

The three models are highly significant at 1% level of significance. Taking Facebook as the base category, the results in Table 3 show that those who use YouTube, LinkedIn and Google are less likely to have negative UGC effect on CBBE than those who rely on Facebook. Professional tools such as LinkedIn and Google also facilitate positive UGC or neutralise the UGC effects on CBBE (see Table 3 below).

TABLE 3: FACTORS INFLUENCING CONSUMER BRAND PERCEPTIONS

		Negative UGC on CBBE		Neutral UGC on CBBE		Positive UGC on CBBE	
		Coeff	*Std. Err.*	*Coeff*	*Std. Err.*	*Coeff*	*Std. Err.*
	WhatsApp	-0.015	0.034	0.036	0.042	-0.017	0.038
	YouTube	-0.004*	0.037	0.043	0.052	-0.021	0.047
	LinkedIn	-0.027*	0.037	0.031*	0.059	0.019***	0.037
	Google	-0.034*	0.036	0.096*	0.074	0.015**	0.012
Read posts		0.013	0.008	0.017	0.011	0.039***	0.007
Hours on the internet		-0.002	0.005	0.004	0.006	0.001**	0.004
Gender		0.002**	0.013	-0.042**	0.018	-0.004	0.003
Expenditure	251 – 500	0.039***	0.018	-0.021	0.023	-0.010	0.011
	501 – 750	0.051**	0.021	-0.056**	0.027	0.017	0.015
	751 – 1000	0.045**	0.024	-0.025	0.031	0.005	0.017
	1001 – 2000	0.038	0.034	0.021	0.043	0.023	0.020
	2001 - 3000	-0.073	0.053	0.022	0.068	0.001	0.028
	3001 - 4000	-0.040	0.065	0.087	0.083	-0.074**	0.045
	> 4000	-0.019	0.046	0.098	0.059	-0.063	0.054
Age	26 – 30	0.016	0.017	0.011	0.022	0.014	0.014
	31 – 35	0.001	0.019	0.050*	0.025	0.023**	0.016
	36 – 40	-0.020	0.020	0.006	0.027	0.014	0.017
Education	Metric	-0.017	0.035	-0.124***	0.045	-0.058	0.029
	Post metric	0.063	0.075	-0.113**	0.043	0.028***	0.062
Race	Coloured	-0.005	0.023	0.027	0.029	-0.010	0.018
	Indian	0.045	0.040	0.162***	0.051	-0.028	0.126
	White	0.066	0.150	0.188	0.194	0.037***	0.033
Constant		0.661	0.051	0.719	0.065	0.698	0.042
Obs		511		511		511	
F (.,.)		13.64		22.49		9.43	
Prob > F		0.0008		0.0000		0.0003	

Source: Survey Data

These results also suggest that those who spend more time on the internet and read posts that have been written by other consumers (UGC) that contain service- or product-related experiences are more likely to have positive UGC effects on CBBE. Similarly, those who spend less money on average per month using digital platforms are more likely to have negative UGC effects on CBBE. Women are more likely to have negative UGC effects on CBBE and less likely to have neutral perceptions than men.

The results show that consumers (31 – 35 years) are more likely to have positive or neutral UGC effects on CBBE than the relatively younger generation of consumers (21 – 25 years). This is likely to be true because this is the category of consumers that has more time and income to spend on the internet since they are most likely to be employed and have relatively smaller families than the 36 – 40-year-old group. While the matric and post-matrics are less likely to have neutral UGC effects, the post-matrics are more likely to have positive UGC effects on CBBE than the grade 8 - 11 group,

CONCLUSIONS

Three hypotheses were tested to establish the significance of positive and negative UGC influences on brand perceptions and they are as follows:

Hypothesis: H1: UGC has a positive influence on the CBBE of major retail businesses in the Cape Metropole.

To determine statistical significance, a statistical level of 0.05 was used for this study; the p-value less than 0.05 is an indication of statistical significance. The p-value of the positive UGC variable is 0. The high probability of a relationship between these two variables is corroborated by the significant frequency distribution of the data tendencies related to the respective variables that constitute the building blocks of CBBE, viz., brand performance, brand reliability, brand credibility and brand loyalty.

To conclude, it is therefore highly probably that Hypothesis H1 is supported by the collected data, and that positive UGC exerts an influence on CBBE.

Hypothesis: H2: UGC has a negative influence on the CBBE of major retail businesses in the Cape Metropole.

The p-value of the negative UGC variable Wilcoxon signed rank tests is 0.04, which displays a significantly higher value in relation to the statistical level of 0.05. Therefore, this indicates a significantly lower or limited influence of negative UGC on CBBE, in relation to the influence of positive UGC on CBBE. Similarly, the frequency distribution of the data tendencies of the elements that have a negative effect on CBBE, such as brand loyalty, brand credibility and the influence of negative recommendations are also less pronounced.

To conclude, it is therefore highly probably that Hypothesis H2 is also supported by the collected data and that negative UGC exerts a medium influence on CBBE.

Hypothesis: H0: UGC does not influence the CBBE of major retail businesses in the Cape Metropole.

The p-value of the mixed-neutral UGC variable Wilcoxon signed rank tests is 0.02, and as it is also less than 0.05, it is therefore an indication of statistical significance that mixed-neutral UGC does not alter CBBE. However, this null hypothesis cannot be completely accepted. The frequency distribution of the data outlining the number of respondents who indicated that mixed-neutral UGC has no influence on their brand perceptions potentially presents a possible inverse relationship, whereby mixed-neutral UGC could potentially influence the CBBE of a larger percentage of respondents. Additionally, the elements that influence CBBE, such as reading and engaging with UGC, as well as the use of UGC content to make more informed purchasing decisions, contradicts the null hypothesis.

Therefore, to conclude, the null hypothesis is rejected, and previous studies and the frequency distribution of data suggest that the possibility of a relationship exists between the elements of mixed-neutral UGC and CBBE.

RECOMMENDATIONS

It is recommended that the FGC that is generated to deal with the influence of negative UGC, as well as the positive FGC that is propagated, needs to be more measured and comprehensive, as opposed to being impersonal, fast, and inaccurate. The FGC should therefore be customised and personalised in order to be effective

Customised FGC enhances the reputation of the retail brand, as online users view this customised attempt as an acknowledgement that they are valued as consumers and are made to feel appreciated. It is also viewed as making a special effort to resolve the issue at hand by acknowledging the consumer by using their correct name and surname. This type of responsive approach also allows the retail brand to respond to the negative UGC in a more personalised and accurate manner, which enhances the credibility of the retail brand and reduces the negative virality of the UGC (Gürhan-Canli et al., 2016:30).

This study found that the presence of UGC influences CBBE both positively and negatively. An additional recommendation would therefore be that retail brands need to develop innovative ways to use their communication strategies to build a relationship with their online consumer markets. By increasing the participation and interaction levels between the retail brand and online consumers, an analogous increase in the associated levels of trust and commitment occurs.

Negative UGC relating to retail brands is often a direct result of product and service failure and the UGC post is often written highly emotively prior to being shared on a social media platform. Retail staff who are expected to respond to these complaints need to be adequately trained to respond to the negative UGC or complaint without being distracted or drawn into the emotive aspects of it. Therefore, retail staff who are responsible for the handling of negative UGC need to be actively engaged with the various social media platforms and they also need to be conscious of the factors that aggravate the generation of additional negative UGC.

High levels of active engagement on social media platforms are crucial to the establishment of high levels of positive CBBE, as this negates the influence of negative UGC on CBBE, as negative UGC seemingly only effects the CBBE of brands with weaker brand equity.

Consistent with the findings of other studies, this study has also concluded that UGC in the form of pictures and video content exerts a more pronounced influence on CBBE. UGC in the form of pictures and videos should also be used by retail brands to create interest and points of engagement for online consumers.

Retail brands should consistently strive to create opportunities for active engagement with online users, as increased engagement between a retail brand and online consumers results in the creation of UGC, which contributes to increased brand loyalty and attachment

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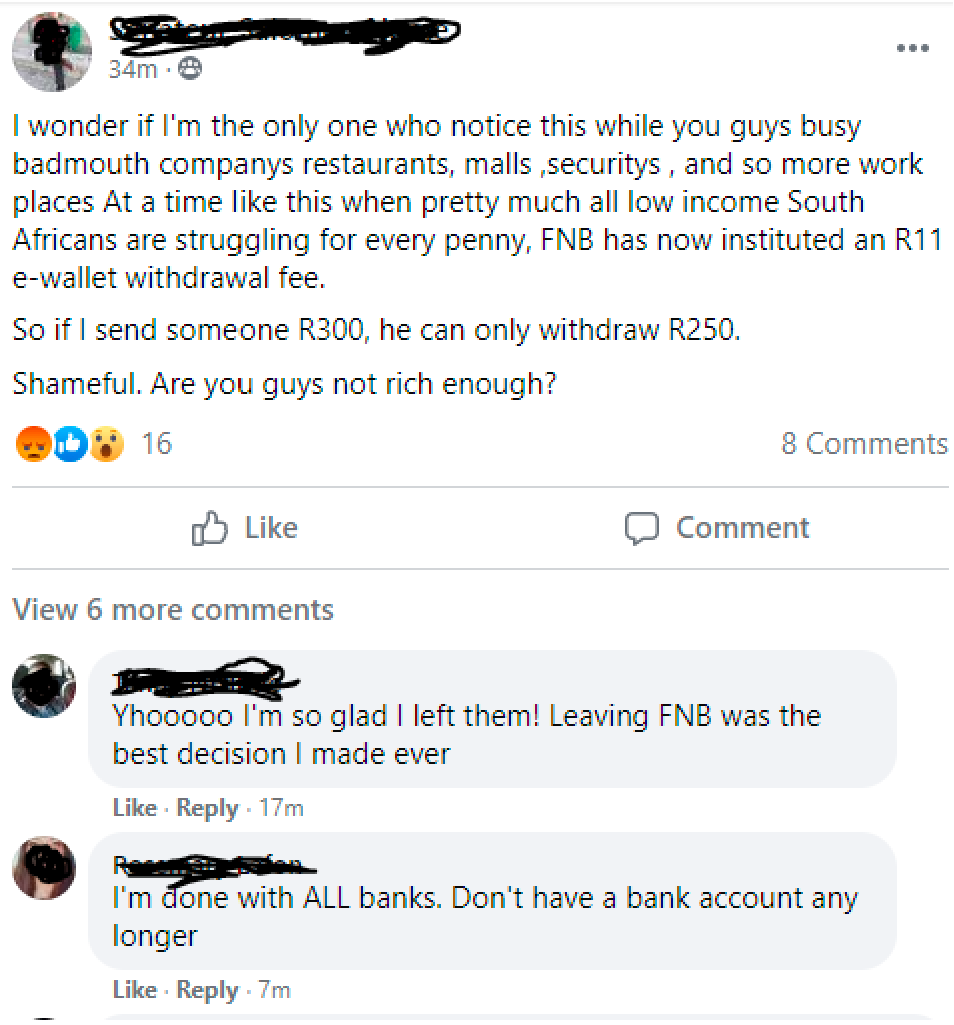
APPENDIX A: QUESTIONNAIRE

USER-GENERATED CONTENT QUESTIONNAIRE

Dear Participant

Thank you for voluntarily participating in this survey on user-generated content (UGC or E-word of mouth), which includes social media conversations about brands and retailers, etc. (refer to the example below). The survey will not take longer than 10 minutes to complete and no personal information is required. Responses are confidential and will provide valuable information on UGC and the impact it has on consumer behaviour. It will only be used for academic purposes.



[redacted]

34m ·

I wonder if I'm the only one who notice this while you guys busy badmouth companys restaurants, malls ,securitys , and so more work places At a time like this when pretty much all low income South Africans are struggling for every penny, FNB has now instituted an R11 e-wallet withdrawal fee.

So if I send someone R300, he can only withdraw R250.

Shameful. Are you guys not rich enough?

[redacted]

Yhooooo I'm so glad I left them! Leaving FNB was the best decision I made ever

[redacted]

I'm done with ALL banks. Don't have a bank account any longer

1. Filter: Do you use any social media platforms that include UGC? 1.1 Yes ☐ 1.2 No ☐

2. Which social media platforms do you use? Tick ALL that apply.
   2.1. Facebook ☐ 2.2. WhatsApp ☐ 2.3. Twitter ☐ 2.4. Instagram ☐
   2.5. LinkedIn ☐ 2.6. YouTube ☐ 2.7. Other ______________________

3. Which digital platforms do you engage with? Tick ALL that apply.
   3.1. Google ☐ 3.2. Yahoo ☐ 3.3. Bing ☐ 3.4. Facebook ☐
   3.5 Instagram ☐ 3.6 Twitter ☐ 3.7 YouTube ☐ 3.8. Daily Motion ☐
   3.9 Vimeo ☐ 3.10 Wordpress ☐ 3.11 Tumblr ☐ 3.12. Gmail ☐
   3.13 WhatsApp ☐ 3.14 Pinterest ☐ 3.15 TikTok ☐ 3.16. Other __________

4. How often do you read posts that have been written by other consumers (UGC) that contain service or product experiences? Tick ONE.
   4.1. Rarely ☐ 4.2. Sometimes ☐ 4.3. Often ☐ 4.4. Always ☐

5. Why do you read posts related to other consumers' brand and service experiences? Tick all that apply.
   5.1. To stay informed about brands ☐ 5.2. To make more informed purchasing decisions ☐ 5.3. I just read them to pass the time ☐ 5.3. I am just curious ☐
   5.4. Other ________________________

6. How many hours do you spend engaging online per day? Tick ONE
   6.1. Less than ½ hour ☐ 6.2. ½ to 1 hour ☐ 6.3. 2 hours ☐ 6.4. 3 hours ☐
   6.5. 4 hours or more ☐

7. How much do you spend on average per month using digital platforms? Tick ONE.
   7.1. Less than R250 ☐ 7.2. R251-R500 ☐ 7.3. R501-R750 ☐ 7.4. R751-R1000 ☐
   7.5. R1001-R2000 ☐ 7.6. R2001-R3000 ☐ 7.7. R3001-R4000 ☐ 7.8. R4001 or more ☐

8. Demographic factors
   8.1. What is your gender?
   8.1.1. Male ☐ 8.1.2. Female ☐ 8.1.3. Non-binary ☐ 8.1.4. Prefer not to mention ☐
   8.2. To which age category do you belong?
   8.2.1. 21-25 ☐ 8.2.2. 26-30 ☐ 8.2.3. 31-35 ☐ 8.2.4. 36-40 ☐
   8.3 What is your highest level of education?
   8.3.1. Grade 8-11 ☐ 8.3.2. Grade 12 ☐ 8.3.3 Completed Grade 12 ☐ 8.3.4. No qualification ☐
   8.3.5. Post-matric diploma/ certificate/degree ☐ 8.3.6. Postgraduate degree ☐ 8.3.7. Other ☐
   8.4. With which population group do you associate yourself most?
   8.4.1. Black ☐ 8.4.2. Coloured ☐ 8.4.3. Indian ☐ 8.4.4. Asian ☐
   8.4.5. White ☐ 8.4.6. Other ☐

9. Please indicate the extent to which you agree/disagree regarding user-generated content (UGC) and brand perceptions (CBBE) of major retail businesses. **(TICK ONE block per statement)**:

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
9.1.	UGC negatively influences my perceptions of brands	9.1.1.	9.1.2.	9.1.3.	9.1.4.	9.1.5.
9.2.	Negative UGC (brand reviews) relating to brand being unreliable, results in my forming negative perceptions	9.2.1.	9.2.2.	9.2.3.	9.2.4.	9.2.5.
9.3.	Negative UGC (brand reviews) relating to poor brand performance, results in my forming negative perceptions	9.3.1.	9.3.2.	9.3.3.	9.3.4.	9.3.5.
9.4.	Negative UGC relating to poor service experiences influence my purchasing decisions	9.4.1.	9.4.2.	9.4.3.	9.4.4.	9.4.5.
9.5.	Negative UGC pictures influence my purchasing choices significantly	9.5.1.	9.5.2.	9.5.3.	9.5.4.	9.5.5.
9.6.	Negative UGC video clips influence my purchasing choices significantly	9.6.1.	9.6.2.	9.6.3.	9.6.4.	9.6.5.
9.7.	Negative UGC pictures of poor service quality experiences negatively influence my perceptions	9.7.1.	9.7.2.	9.7.3.	9.7.4.	9.7.5.
9.8.	Negative UGC video clips of poor service quality experiences negatively influence my perceptions	9.8.1.	9.8.2.	9.8.3.	9.8.4.	9.8.5.
9.9.	Negative UGC alters the overall image I have of the brand	9.9.1.	9.9.2.	9.9.3.	9.9.4	9.9.5.
9.10.	I remember the negative UGC for a long time after being exposed to it.	9.10.1.	9.10.2.	9.10.3.	9.10.4.	9.10.5.
9.11.	I remember the associated negative brand perceptions for a long time after being exposed to negative UGC.	9.11.1.	9.11.2.	9.11.3.	9.11.4.	9.11.5.
9.12.	Negative UGC alters my feelings towards the brand	9.12.1.	9.12.2.	9.12.3.	9.12.4.	9.12.5.
9.13.	Negative UGC affects the confidence I have in a brand	9.13.1.	9.13.2.	9.13.3.	9.13.4.	9.13.5.
9.14.	I tend to dislike the brand after being exposed to negative UGC	9.14.1.	9.14.2.	9.14.3.	9.14.4.	9.14.5.
9.15.	I no longer regard the brand as being credible after I am exposed to negative UGC about the brand	9.15.1.	9.15.2.	9.15.3.	9.15.4.	9.15.5.
9.16.	My overall opinion regarding the quality of the brand is influenced when exposed to negative UGC	9.16.1.	9.16.2.	9.16.3.	9.16.4.	9.16.5.
9.17.	I will not consider the brand when making my next purchase after being exposed to negative UGC	9.17.1.	9.17.2.	9.17.3.	9.17.4.	9.17.5.
9.18.	My relationship with the brand is negatively affected after being exposed to negative UGC	9.18.1.	9.18.2.	9.18.3.	9.18.4.	9.18.5.
9.19.	Negative UGC results in my no longer being loyal to the brand	9.19.1.	9.19.2.	9.19.3.	9.19.4.	9.19.5.
9.20.	I will no longer actively engage with the brand after being exposed to negative UGC	9.20.1.	9.20.2.	9.20.3.	9.20.4.	9.20.5.

10.1.	**UGC positively influences my perceptions of brands**	10.1.1.	10.1.2.	10.1.3.	10.1.4.	10.1.5.
10.2.	Positive UGC (brand reviews) relating to brand being reliable, results in my forming positive perceptions	10.2.1.	10.2.2.	10.2.3.	10.2.4.	10.2.5.
10.3.	Positive UGC (brand reviews) relating to brand performance, results in my forming positive perceptions	10.3.1.	10.3.2.	10.3.3.	10.3.4.	10.3.5.
10.4.	Positive UGC relating to positive service experiences influences my purchasing decisions	10.4.1.	10.4.2.	10.4.3.	10.4.4.	10.4.5.
10.5.	Positive UGC pictures influence my purchasing choices significantly	10.5.1.	10.5.2.	10.5.3.	10.5.4.	10.5.5.
10.6.	Positive UGC video clips influence my purchasing choices significantly	10.6.1.	10.6.2.	10.6.3.	10.6.4.	10.6.5.
10.7.	Positive UGC pictures and video clips of service quality experiences positively influence my perceptions	10.7.1.	10.7.2.	10.7.3.	10.7.4.	10.7.5.
10.8.	Positive UGC video clips of service quality experiences positively influence my perceptions	10.8.1.	10.8.2.	10.8.3.	10.8.4.	10.8.5.
10.9.	Positive UGC alters the overall image I have of the brand	10.9.1.	10.9.2.	10.9.3.	10.9.4.	10.9.5.
10.10.	I quickly forget about positive UGC after being exposed to it.	10.10.1.	10.10.2.	10.10.3.	10.10.4.	10.10.5.
10.11.	I quickly forget about the associated positive brand perceptions after being exposed to positive UGC	10.11.1.	10.11.2.	10.11.3.	10.11.4.	10.11.5.
10.12.	Positive UGC alters my feelings towards the brand	10.12.1.	10.12.2.	10.12.3.	10.12.4.	10.12.5.
10.13.	Positive UGC affects the confidence I have in a brand	10.13.1.	10.13.2.	10.13.3.	10.13.4.	10.13.5.
10.14.	I tend to like the brand more after being exposed to positive UGC	10.14.1.	10.14.2.	10.14.3.	10.14.4.	10.14.5.
10.15.	I regard the brand as being more credible after I am exposed to positive UGC about it	10.15.1.	10.15.2.	10.15.3.	10.15.4.	10.15.5.
10.16.	My overall opinion regarding the quality of the brand is influenced when exposed to positive UGC	10.16.1.	10.16.2.	10.16.3.	10.16.4.	10.16.5.
10.17.	I will consider the brand when making my next purchase after being exposed to positive UGC	10.17.1.	10.17.2.	10.17.3.	10.17.4.	10.17.5.
10.18.	My relationship with the brand is positively affected after being exposed to positive UGC	10.18.1.	10.18.2.	10.18.3.	10.18.4.	10.18.5.
10.19.	Positive UGC results in my being loyal to the brand	10.19.1.	10.19.2.	10.19.3.	10.19.4.	10.19.5.
10.20.	I tend to actively engage with the brand after being exposed to positive UGC	10.20.1.	10.20.2.	10.20.3.	10.20.4.	10.20.5.
11.	**UGC (brand reviews) relating to a brand does not alter my perceptions of a brand**	11.1.	11.2.	11.3.	11.4.	11.5.
11.1.	UGC (pictures) has no influence on my purchasing choices	11.3.1.	11.3.2.	11.3.3.	11.3.4.	11.3.5.
11.2.	UGC (video clips) has no influence on my purchasing choices	11.4.1.	11.4.2.	11.4.3.	11.4.4.	11.4.5.

11.3.	My overall opinion regarding the quality of the brand is not influenced when exposed to UGC.	11.5.1.	11.5.2.	11.5.3.	11.5.4.	11.5.5.
11.4.	The overall image I have of the brand is not altered when exposed to UGC	11.6.1.	11.6.2.	11.6.3.	11.6.4.	11.6.5.
11.5.	UGC does not alter my confidence in the brand as I do not trust UGC	11.7.1.	11.7.2.	11.7.3.	11.7.4.	11.7.5.
11.6.	My feelings or emotions towards the brand are not influenced by UGC	11.8.1.	11.8.2	11.8.3.	11.8.4.	11.8.5.
11.7.	I will continue to engage with the brand after being exposed to UGC	11.9.1.	11.9.2.	11.9.3.	11.9.4.	11.9.5.

THANK YOU FOR YOUR TIME!

The impact of security, audio-visual, time-saving orientation, relative advantage and trust in fast food websites on purchase intention

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ABSTRACT

Background: The marketing value of the characteristics of a website is vital to both business and academia. Several useful characteristics of websites have been investigated independently and mostly for developed economies. Consequently, developing economies have to depend on results obtained outside of their developmental contexts. Fast food website-based marketing and transactions have to a large extent, applied what has been available from disjointed findings based on other industries.

Purpose of the study: The objective of this article was to empirically investigate whether security, audio-visual, time-saving orientation, relative advantage, and trust in fast food websites have an impact on purchase intention in South Africa.

Methodology: Study respondents were selected following the convenience sampling method. About 202 students from a South African university in Gauteng participated in the study. The study used the SPSS 25 and AMOS 28 statistical packages for data analysis.

Results: The results prove that the selected independent variables positively impact fast food purchase intention and thus validated the proposed model.

Implications: These results glaringly invite further academic scrutiny to unearth other characteristics that positively or negatively influence fast food purchase intention. The outcomes could further be qualitatively scrutinized to understand why these characteristics work.

Managerial implications: Enormous opportunities also arise for other industries that use websites for marketing and transactions. This should assist managers in creatively applying limited resources to outperform the competition as will be explained in the text.

Keywords: Security; Audio-visual; Time-saving orientation; Relative advantage; Trust; Purchase intention.

JEL classification: M31; M37; 018; O35

Disclosure statement

There are no potential conflicts of interest to be reported.

INTRODUCTION

Management strategy requires information to better understand client needs and align with their expectations (Soni, 2020), to better fit these expectations (Rosario & Raimundo, 2021). The ideal space to locate most information on client needs is on the Internet (Rosario & Raimundo, 2021), the digitalized source of information (Tappen et al., 2022), due to the global increase in online shopping and its' wide reach (Qalati et al., 2021). Internet technology provides an ideal platform for online transactions (Bergeron et al., 2022) by allowing visibility, access to the market, and easy sales and transactions (Ghesmati et al., 2022). One important application of internet technology is the use of websites (Yudana, & Prapitasari, 2022). Many studies attest to the tremendous growth of this application (Alzoubi et al., 2022; Williamson et al., 2022; Coffey & Coffey, 2022). Websites represent one of the fundamental tools in online business strategies because they provide platforms that present in-store experience and interaction to influence purchase decisions (Kidane & Sharma, 2016), and allow comparisons and decision-making (Ghandour, 2015; Mozas-Moral et al., 2021). Websites also act as channels through which communication between companies and their customers takes place and where information about companies' offerings is displayed (Fernández et al., 2019). Through its website, a company can engage in public relations, sales promotion, and relationship marketing initiatives (Louw & Nieuwenhuizen, 2019), actions that positively impact customers' purchase decisions (Ahmed & Shaker, 2021). It is therefore reasonable to conclude that well-developed websites can give companies a competitive advantage (Kumar & Pansari, 2016; Ahmed et al., 2021).

Another notable trend is that most online transactions are made by young people (generation Y and Z) (Melović et al. 2021; Lathabhavan & Padhy, 2022; Roth-Cohen et al., 2022), the generation that is mostly composed of 18-40 years (Rahmawati, Ratnasari et al., 2022). All these developments happen in the context of the growth in the fast food industry (FFI) as confirmed by both Shahzad et al. (2022) and Zion Market Research (2017). The growth in the FFI can be attributed to the fact that fast food (FF) is easily accessible, inexpensive and attractive, affords people a degree of autonomy and agency (Shahzad et al., 2022), and offers variety, convenience, and availability (Ehsan, 2012). Fast food (FF) is generally associated with consumers' tastes and lifestyles (Akbay et al., 2007). Xue et al, (2019) and Khalid et al., (2019) state that the trend of FF consumption is more pronounced among young people in developing economies. The growth in the purchasing power of the young generation, their shift toward fast food consumption, and the increasing use of website technology make the understanding of their purchasing decisions attractive (Melovic et al., 2021).

PROBLEMS AND PURPOSE OF THE STUDY

Xiao et al, (2018) empirically investigated factors that affect purchase intention amongst Generation Y. The constructs for that study were price, service quality, restaurant environment, and food quality. Further, Jha et al, (2022) conducted a study that dealt with fast food purchase intention for the Generation Z group, and their study only concentrated on how community social involvement influences Generation Z fast food purchase decisions. The above examples illustrate how fragmented the studies for the two generations in the fast food industry are. A gap, therefore, remains to further investigate how other factors might influence both Generation Y and Z fast food consumption behaviours. A call, therefore, by Chang et al, (2019) and Boardman and McCormick (2021) for research into website characteristics that influence purchase intention, especially for these groups (which according to Dwidienawati and Gandasari (2018)) account for more than fifty percent of the world's population is still valid. Subsequently, studies in developed economies have been undertaken (Akpan et al., 2022; Huseien & Shah, 2022). Some studies indicated that websites should be interactive (Nasir et al., 2021; Villasana et al., 2020), useful (Carlos et al., 2021), be of excellent quality (Akgül, 2021; Meade & Dreyer, 2021), contain audio-visual and time-saving elements (Hussein et al., 2022). Valdez-Juárez et al., (2021) brought a different angle to website characteristics by highlighting challenges for website-based transactions. Highlighted issues are website design, security, trust, risk, uncertainty, and satisfaction with online purchases. The common thread among all these website attributes and challenges is that they were investigated in isolation (industry specifications such as buyer type, hospitality industry, etc), in contexts outside of the FFI (Ameen et al., 2021; Kalia & Paul, 2021), and were conducted in a developed economies' contexts. Academics concur that research context matters (Irshaidat et al., 2022; Floyd & Grubbs, 2022) and that effective persuasive features for one group may not be appropriate for another (Nkwo & Orji, 2021). Presently, there is an under-exploration of the antecedents of purchase intention in developing countries' contexts (Xue et al., 2021). Therefore, an investigation into issues applicable to developing countries' technology-inspired antecedents for Generations Y and Z to fast food purchase intention is worthwhile. The present study was conceptualized as a response to these identified knowledge gaps by investigating the antecedents of South African Generation Y and Z's website-inspired fast food purchase decisions. In line with sound academic practice, the researchers gleaned from previous works to identify Audio-visual (AV), Relative advantage (RA, Time saving (TSO), Security (SECURITY), and Trust (TRUST) as possible antecedents to FF purchase intention in South Africa (Hung et al., 2014; Al-Debei et al., 2015; Mohammad et al, 2022). The purpose of the study was to use the Behavioral reasoning theory (BRT) to develop a new research framework applicable to the fast food industry in South Africa and with possible extension to other industries. The validation of the model would hopefully extend the application of the BRT to fast food operations in a developing economy context. The impact of the identified variables on fast food purchase intention could be further investigated in other developing countries and comparisons can be made between what applies to those economies and in South Africa. Comparative studies between developed and developing economies can also be undertaken. The study also holds promise for other businesses that operate in SA. It will assist them when making technology investment decisions, as will be shown below. The rest of the article is organized as follows. The first part deals with the literature review, the second part methodology, followed by data analysis, and lastly, results discussion, implication, and recommendations of the study.

LITERATURE REVIEW

This subsection covers the grounding theory, operationalization of the dependent variable, and hypotheses development.

GROUNDING THEORY

This study is anchored on arguments derived from Behavioral reasoning theory (BRT). Kempen and Tobias-Mamina (2022) describe BRT as a new theory in the field of marketing that links attitudes, beliefs, behaviors, reasoning, and subjective norms in favor of and against consumer purchasing intentions. BRT is one theory that bridges the gap between motives, intentions, barriers, and behavior in the adoption of technology (Claudy et al., 2017). In so doing, it provides a bridge for disjointed technology acceptance theories (Dhir et al., 2021). It, therefore, covers issues related to innovation adoption, persuasion, and possible resistance to acceptance (Kempen & Tobias-Mamina, 2022). This theory adequately caters to the variables for the present study (namely; website audio-visual, relative advantage, website security, trust in the website, and purchase intention) because it deals with both the issues that motivate young people to transact online and those that create barriers to the adoption of website technology. The theory has been successfully applied in other food research contexts such as organic food purchase intention (Leyva-Hernández et al., 2023). It has also been applied in a technology acceptance context such as artificial intelligence (Mariani et al., 2022.). Given the above context, the theory was deemed robust enough to ground the present study.

OPERATIONALIZATION OF THE DEPENDENT VARIABLE (PURCHASE INTENTION)

Consumers purchasing intention (PI) through the Internet is an important phenomenon in the world of marketing (Ali & Aziz, 2022). It can be defined as an individual's subjective possibility that they will perform some behaviour (Fagan et al., 2003; Saprikis et al., 2018). To cater to online PI, Ahmed, Ali, and Top (2021) define purchase intention as the consumers' intention to create a relationship with web retailers online and to make online transactions with them. PI is largely shaped by customers' thoughts and perceptions (Balasudarsun et al., 2022). Its' importance lies in the fact that behavioural intention is viewed as a direct precursor of usage and provides an indication of a person's readiness to perform a specific behavior (Usman & Kumar, 2021). It is, therefore, a significant component of the long-term sustainability of any business (Balasudarsun et al., 2022).

HYPOTHESES DEVELOPMENT

The subsection covers hypotheses development for the relationship between the independent variables (website audio-visual, website relative advantage, website time-saving, website security, and website trust) and the dependent variable (PI).

Website Audio-visual elements and fast food purchase intention (VA-PI)

Website advertisements should contain audio-visual elements. Advertising aims to inform, persuade, remind (Kotler & Armstrong, 2017), and to give customers a positive perception of the brand (Zeng et al., 2022). The most important people's perception modalities are audio and visual (vision, hearing, taste, touch smell) (Laukkanen et al., 2022). In an attempt to cover these different areas, and with the increased use of the internet, online audio and visual are becoming more popular (Chen & Panyaruang, 2021). Trinanda and Sari (2021) state that website advertisements with audio-visual elements can achieve that. Rodriguez (2021) and Darmawan and Setyani (2021) also showed that the most popular advertisements among young people (18-29) are those with audio-visual elements. Further, Rahayu, (2021) and Darmawan and Setyani, (2021) demonstrated that consumers' perception of the utility of attitude through audio-visual media has a positive impact on consumer buying behavior. Also, Abernethy and Franke, (1996); Poels and Dewitte, (2006) had earlier shown that it improved advertising efficiency in terms of participants' attitudes toward the website food communication (advertisements) and purchase intention, and Herget et al, (2021) also noted that music in an advertisement can have a more positive effect on commercial, product, and brand evaluation, as well as on recall and purchase intentions. Following this logic, for website-based communication, the study hypothesizes that:

H1: Fast food website advertisements with audio-visual elements have a significant positive impact on customers' purchase intention.

Website's Relative Advantage and fast food purchase intention (RA-PI)

Relative advantage refers to the advantage that individuals perceive about the innovation when an innovation comes to life rather than its intellectual dimension (Yaprak et al., 2021). It is advantageous when it comes to life or deaf issues (Hashem & Tann, 2007). Yaprak, et al, (2021) state that Innovation is perceived with relative advantage (degree of an advantage over a precursor), complexity (difficulty perceived by the individual about the innovation), compatibility (consistency of the innovation with past and future), trialability (ease of the trial) and observability (the degree of innovation being transferred from individual to individual). In the present context, relative advantage refers to the perceptions of customers about the importance of purchasing online (Alhaimer, 2022). Japutra et al, (2022) state that customer perception of relative advantage positively influences the behavioral intentions toward a brand. The advent of COVID-19 has presented customers with the possibility of online transactions. This infers that the relative advantage of online purchasing has increased because of its role in protecting people from physical contact (Alhaimer, 2021). Taking the above into consideration, the study posits that:

H2: Perceived relative advantage of a fast food website has a significant positive effect on purchase intention.

Website's Time-saving Perception and fast food purchase intention (TSO-PI)

The use of the website can save time (Tanti et al., 2021). The time-saving deals with delayed and immediacy of service (Bagaïni et al., 2022; Vosburg & Robinson, 2022). Escobar-Rodríguez and Bonsón-Fernández, (2017) state that the time-saving nature of online shopping is a motivational factor. According to Gnanadhas and Sunitha, (2014), time savings can come from the reduction of costs of fuel to drive to shops, the number of options, and ease of access without long queues from anywhere. Ahmed, Ali, and Top (2021) describe time-saving as the reduction and absence of the need to hold in lengthy lines to get your desired product, buyers having access to very tiny details about the product they desire to purchase resulting in further access to observe other customers' reviews and satisfaction rates on the particular product. Time-saving is one of the factors in purchase intention during the COVID pandemic (Hong et al., 2021). Gleaning from the above discussion, it can be hypothesized that:

H3: Fast food websites perceived as saving customers' time have a significant positive effect on their purchase intention.

Fast food website security and purchase intention (SECURITY-PI)

Security may be defined as defending the information of transactions and clients from internal and external fraud/crook utilization (Dhingra et al., 2020). Security can be described as the extent to which shoppers consider that their online transactions are free from unauthorized access, use, change, and destruction (Chiemeke; Evwiekpaefe, 2011). Security feelings go hand in hand with perceptions of safety (Ylönen et al., 2022), of both data, physical harm, and loss (Deal & Sambasivam, 2022). It also goes together with online privacy concerns (Mgiba, 2021). It is also a known challenge for online transactions all over the world (Tarhini et al., 2015; Qalati et al., 2021). Tarhini et al. (2015) highlighted that security was the main reason why potential customers were scared to do business online. Hence, the perception of risk concerning internet security has been acknowledged as a concern for all users of internet technologies (Kabango & Asa, 2015). The need for the security and safety of information systems has been identified as a key factor in satisfying the needs of consumers (Valdez-Juárez et al., 2021). It stands to reason that business websites should provide information that highlights the privacy and security features of their websites. Further, Qalati, et al, (2021) and Valdez-Juarez et al, (2021) confirmed that a higher level of website security has a positive and significant effect on online consumer satisfaction. Merhi et al., (2019) also concluded that behavioural intention was influenced by perceived security, perceived privacy, trust, and habit of mobile banking users. In this regard, security must be ensured that online transactions are safe as well as protect consumers' privacy online retailers (Kumar & Dange, 2012). Thus, security is a major predictor of consumers' intention to shop online (Usman & Kumar, 2021). Security and privacy concerns are related to the fear of personal data misuse and hacking (Balta-Ozkan et al., 2013; Attié & Meyer-Waarden, 2022). Building from the literature review, the following hypothesis for fast food purchaser intention is posited:

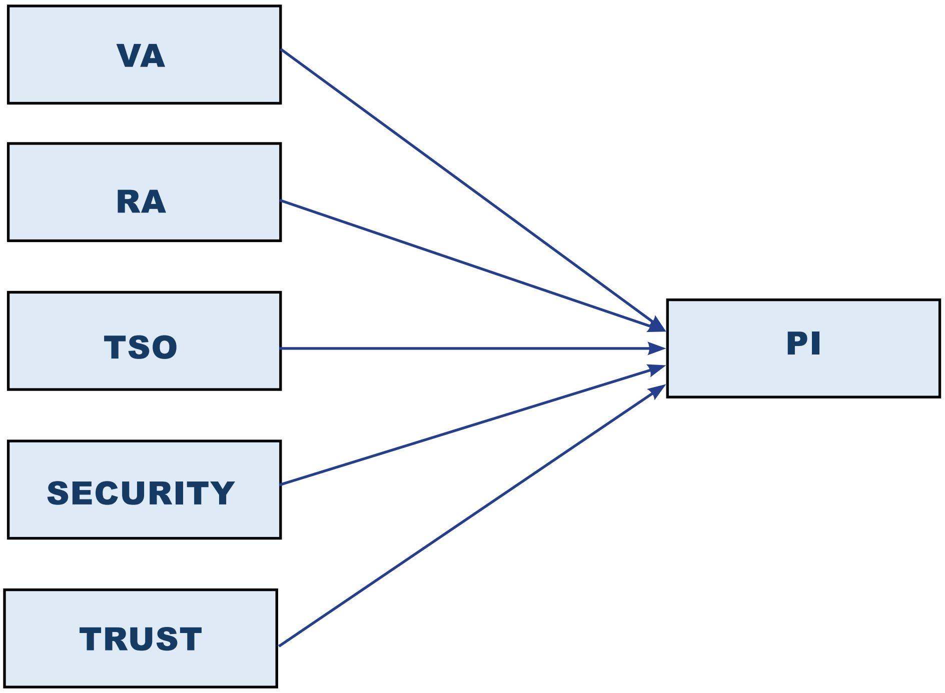
H4: Website security in a fast food website has a significant influence on fast food purchase intention

Trust in the fast food website features and the Intention to purchase (TRUST-PI).

Trust is the core of every human relationship and communication (Thagard, 2021) and a binding force in online shopping between buyer and seller transactions (Qalati et al., 2021; Khan et al., 2015). It comprises three main elements (predictability, reliability, and fairness) and is considered an economic calculation where the values are explored by the comparisons between the relationship, creating and sustaining with the actual costs of serving it (Yuen et al., 2018). To product recommendations on social networking sites such as Facebook, perceived ability, perceived benevolence/integrity, perceived critical mass, and trust in a website were four important antecedents of trust (Kim & Park, 2013). Customers may be reluctant to purchase online due to a lack of trust (Qalati et al., 2021). In the website context, Bauman and Bachmann (2017) affirm that online trust is the most crucial element of business strategy as it lessens perceived risk and creates positive word of mouth. Perceived trust is best defined as having certainty about an online store, having absolute certainty that the quality they advertise is the quality the consumer gets while he/she purchases (Budur et al., 2019; Torlak et al., 2021). That is why all consumers have some levels of distrust in their minds about buying online (Winand & Pohl, 2000). There are many trust issues among consumers while online shopping, including the quality of the product, the faithfulness of the price, the delivery process, etc. Lastly, it was observed that trust was positively related to online purchase intentions (Ahmed et al., 2021). It can also be concluded when customers perceive a business website to be secure and free from risks, trust in online transactions with that business will also be enhanced. For the South African context, this study, therefore, hypothesizes that:

H5: Trusting a fast food website has a significant impact on purchase intention.

The above set of hypotheses can be summarized in the conceptual framework in Figure 1.



Source: From proposed hypotheses

FIGURE 1: POSITED RESEARCH MODEL

METHODOLOGY

To test the hypotheses, the researchers used the positivist approach as recommended by the literature (Washika et al., 2021; Park et al., 2021), because this approach is both observable and measurable (Washika et al., (2021). The targeted groups were both Gen Y (born in 1981-1995) and Gen Z (1995-2012) (Barhate & Dirani, 2022), the generations largely born at the beginning and the heart of technological advances (Mahmoud et al., 2022). The oldest among these groups is about 40 years old. The reason for targeting these groups was that they are educated (Nour et al, 2022), lavish with money (Saeeid & Azmi, 2019), and are accustomed to transacting online (Deka, 2018). The respondents were all based in a Johannesburg University in South Africa. They are assumed to be technology savvy, driven by technology (Rhoth-Cohen et al., 2022), and able to furnish the required responses to the questionnaire (Bhore & Pandita, 2022). This assumption is supported by other studies (Nguyen et al., 2022; Rhoth-Cohen et al., 2022; Udhany & Simangunsong, 2022). Sampling followed examples of recent studies that dealt with technology adoption and used the Non-probability approach (Casstro-Martin et al., 2022). The approach is also in line with studies that used theory (namely TAM) closely related to BRT. (Nasution & Azmin, A2018; Wulandari, 2020). The common elements between TAM and BRT are that they are all applied in the acceptance of technology.

Primary data was collected using a structured questionnaire (Bhore & Pandita, 2022). Each of the six variables was measured using five reflective items adapted from prior studies. Ariffin et al., (2018), and Oghazi et al., (2018) contributed a huge chunk of the construct indicators for the study. The latent constructs were measured using a 5-point Likert scale ranging from 1 = “strongly disagree” to 5 = “strongly agree”) to record responses (Nkwo and Orji, 2021; Prasetyo et al., 2021).

Following standard COVID-19 protocols, online surveys, in the form of Google questionnaires, were used to collect the data (Singh & Sagar, 2021; Cleave, 2020; Menon & Muraleedharan, 2020). The data was transferred to an Excel spreadsheet and downloaded by the researcher for analysis purposes. The researchers targeted a sample size of 300 respondents but only achieved 202 fully completed questionnaires. This was considered acceptable to cater to both adequate statistical power (Hair & Alarmer, 2022) and SEM’s minimum sample size requirements of 200 participants

(Hair et al., 2019). A proper statistical power ensures the satisfactory probability of detecting the effects of interest (independent and dependent variables) for the researchers (Baguley, 2004). Throughout the project, the researchers followed all known ethical requirements of informing the participants of the purpose of the study (Malik et al., 2017) and explaining how their privacy and anonymity would be protected (Mgiba &Chiliya, 202020). No data were collected to identify individual participants, and there were no incentives to encourage their participation. There were also, no reminders to complete the questionnaires (Saleh & Bista 2017). Lastly, the researchers obtained an ethical clearance certificate from a Johannesburg-based institution of higher learning in Johannesburg. The ethical clearance certificate protocol number is H21/05/41.

DATA ANALYSIS

This study applied structural equation modeling (SEM) for data analysis, due to its advantages. SEM is ideal for investigating the relationships among unobserved variables (Mueser et al. 2017). Using the SEM approach, analysis can include latent constructs while accounting for measurement errors in the estimation process (Ledermann & Kenny 2017), and, most importantly, it provides support for examining and validating hypotheses due to its ability to do away with bias and distortion (Avkiran 2018; Naor & Punj 2015). Amos version 25 was applied to analyse both the measurement and the structural models (Kim et al., 2018; Ringle, Wende & Becker 2015), following Gerber's two-step approach (Zhaoa, Xub & Wang 2019). Confirmatory factor analysis (CFA) and path analysis were performed simultaneously (Davari & Rezazadeh 2015). According to (Li et al, (2016 SEM is suitable for evaluating the measurement model's reliability and validity (how well the latent variables are measured by the observed variables). The survey data was analyzed in the following order: demographic information, measurement model accuracy assessment, model fitness tests, and hypotheses testing.

DEMOGRAPHIC INFORMATION DISCUSSIONS

For demographic information analysis, the researchers SPSS. The descriptive statistics are summarized in Table 1.

TABLE 1: DEMOGRAPHIC INFORMATION OF PARTICIPANTS

Information		Frequency	Percentage
Gender	Male	139	68.8
	Female	59	29.2
	Prefer not to say	4	2
Age	18-25	122	60.4
	26-35	36	17.8
	35 and older	44	21.8
Access to internet	Yes	201	99.5
	No	1	0.5

Source: Analysis results.

Please note: *The age groups included in the analysis for Generations Y and Z have been given in the document. All the respondents fall within the required age groups.*

From the table, the majority of the respondents were males at 68.8%. The female respondents accounted for 29% and "the preferred not to say" 2%. The profiles correspond well with the university population numbers of more males than females as reflected in the gender fact sheet of the South African Department of Higher Education and Training (dhet.org.za). For the age groupings, the majority of the participants were under Generation Z (18-25 years), followed by Generation Y (26-40+). Of those participants, about 99.5% had access to the internet and websites. Judging from the data collected using the online approach, the researchers concluded that all the respondents had some access to these communication technologies. A consumer would not be able to purchase goods online without the ability to access the internet.

ASSESSMENT OF THE MEASUREMENT/INNER MODEL

Before the assessment of the structural model, the inner model's accuracy had to be checked (Qalati et al., 2021), by assessing the reliability, validity of the model, and model fitness (Nhlabathi et al., 2021).

The reliability of a measuring instrument shows the extent to which this measurement can provide relatively no different results when repeated measurements are made on the same subject, as long as the aspects measured in the subject have not changed (Widohardhono et al., 2022). In line with sound academic practice, the reliability of the model, the item-to-total correlation coefficient (ITT), and Chronbach-alpha values were used (Uzun et al., 2022). ITT tests the correlation between any item with the total scores without that Item (Flom, 2022). If the ITT value is greater than 0.3, a good correlation is confirmed. Any item whose ITT value is below 0.3 should be removed (Silva, 2017). Using that logic, some items were discarded before the final model was confirmed. Also, to further confirm the reliability, the Cronbach-alpha should be greater than 0.6 (Hair et al., 2020; Nasution et al., 2021). The values for both ITT and the Chronbach-alpha in Table 2 above confirm the reliability of the measurement model.

TABLE 2: RELIABILITY AND VALIDITY ANALYSIS RESULTS

Variable	Number of items	Mean	Standard deviation	Chronbach alpha	Item to total	Item to total correlation
Security	3.70	3.70	0.94	0.81	0.68	0.75
	3.12	3.12	1.12		0.67	0.82
	3.45	3.45	089		0.65	0.72
	3.97	3.97	0.99		0.52	0.60
Audio-visual	4.94	4.94	0.65	0.62	0.24	0.44
	4.36	4.36	0.85		0.30	0.47
	3.94	3.94	1.07		0.41	0.49
	4.27	4.27	0.79		0.60	0.80
	4.05	4.05	1.02		0.36	0.42
Relative advantage	4.36	4.36	0.73	0.74	0.48	0.61
	3.50	3.50	1.03		0.53	0.61
	3.71	3.71	0.99		0.56	0.63
	3.82	3.82	0.99		0.49	0.53
	4.45	4.45	0.65		0.48	0.64
Time-saving orientaTION	4.17	4.17	0.84	0.81	0.63	0.70
	3.99	3.99	0.88		0.54	0.64
	4.04	4.04	0.86		0.67	0.75
	4.31	4.31	0.82		0.54	0.63
	4.17	4.17	0.99		0.58	0.64
Purchase intention	4.17	4.17	0.75	0.87	0.46	0.47
	4.42	4.42	0.68		0.60	0.61
	4.51	4.51	0.67		0.52	0.53
	3.80	3.80	1.02		0.50	0.53
	3.80	3.80	0.96		0.53	0.53
	4.22	4.22	0.79		0.61	0.61
	4.19	4.19	0.75		0.72	0.79
	3.98	3.98	0.82		0.67	0.70
	4.15	4.15	0.78		0.64	0.74

Source: From analysis results

Measuring the validity of the instrument is another requirement for measurement model analysis (Mohajan, 2017). The validity of the model deals with the extent to which the instrument measures what it intends to measure (Mishra et al., 2022). For the present study, both the convergent and discriminant validities were checked. Towards that end, factor loadings (to measure convergent validity) and the correlation matrix (to measure discriminant validity) were used. Factor loadings for the study are represented in Table 2. Factor loadings display the relationship between the indicator variables with their construct (Anderson, 1987). Higher factor loading implies a strong relationship between them (Frye et al., 2020). According to Cho and Sagynov (2015), and Gabe and Jaime (2022) factor loadings of 0.5 are acceptable. The correlation matrix results are displayed in Table 3. The correlation matrix displays the distinctiveness of each construct, which can be confirmed by checking whether each indicator variable uniquely loads on only one construct (Voorhees et al., 2016). Discriminant validity was confirmed because the values obtained on the inter-construct correlation values were below 0.90 (Henseler et al., 2015). According to Cheung, Cooper-Thomas, Lau, and Wang, (2023), the inter-correlation cutoff value to confirm discriminant validity is 0.9.

TABLE 3: INTER-CONSTRUCT CORRELATION MATRIX

	VA	RA	TSO	SECURITY	TRUST	PI
VA	1.00					
RA	0.52	1.00				
TSO	0.403	0.752	1.00			
SECURITY	-0.69	0.345	0.278	1.00		
TRUST	0.176	0.435	0.246	0.796	1.00	
PI	0.588	0.663	0.0.579	0.286	0.16	1.00

Source: Analysis results

MODEL FITNESS TEST RESULTS

Model fitness indices are necessary to judge the adequacy of the hypothesized model (Knekta et al., 2019). In turn, adequacy can be assumed when the data collected supports the hypothesized model (Tabachnic & Fidell, 2013). It can be tested using different indicators (Melovic et al., 2021). To examine the validity of the questionnaire (Ali & Aziz, 2022). Van Laar and Braeken (2022) recommend the use of Chi-squared, CFI, and RMSEA.

All the analysis figures fell within the required threshold as shown in Table 4. It was only after confirming the model fitness that the structural model analysis was undertaken.

TABLE 4: GOODNESS OF FIT INDICES

Indices	Threshold	Current study value	Decision
Chi-square	Less than 3	1.830	Acceptable
CFI	0.8	0.8	Acceptable
RMSEA	0.08	0.064	Acceptable

Source: Analysis results

STRUCTURAL MODEL ANALYSIS RESULTS

Bootstrapping was performed to test the hypotheses and to check the statistical significance of the standardized regression path coefficients. Literature recommended t-values above 1.96 for support for the hypothesis with a p-value of 0.05 (Ali & Aziz, 2022; Gefen et al., 2000; Ayimbila & Pappoe, 2022). The study's outcomes are displayed in Table 5.

TABLE 5: STRUCTURAL EQUATION ANALYSIS RESULTS

Relationship	Hypotheses	Path coefficient	P-value	Decision
VA-PI	H1	0.145	**	Supported and significant
RA-PI	H2	0.163	**	Supported and significant
TSO-PI	H3	0.245	**	Supported and significant
SECURITY-PI	H4	0.254	**	Supported and significant
TRUST-PI	H5	0.560	**	Supported and significant

Source: Analysis results, for 0.05 significant level.

Positive values of the standardized regression coefficients suggest a positive relationship between the observed factors (Knittel & Ozaltun, 2020). The positive correlation coefficients imply that all the independent variables move together with PI. Further, the differences in regression coefficients emphasize that the impacts of the independent construct on PI are not the same (Knittel & Ozaltun.2020), and the higher the path coefficient values, the greater the impact of the factor from which the arrow moves on the factor to which the arrow goes (Melovic et al., 2021).

DISCUSSION

Earlier studies on fast food have not attempted to isolate website characteristics that deal specifically with FF purchase decisions from developing countries' perspectives (Hanaysha, 2022; Chang & Su, 2022; Hossny, 2022). The majority of these studies have been conducted mostly from a developed economies perspective (Hanaysha, 2022; Murillo et al., 2022; Chang & Su, 2022; Hossny, 2022). Consequently, enablers of website-based purchase intentions in developing countries' context are relatively unexplored in literature. As a result, for these economies, academics and fast food business practitioners have been unable to thoroughly conceptualize the factors that encourage the adoption of website technology for businesses. The present study aimed at conceptualizing the relationship between specific factors with customers' purchase decisions in the South African context. Informed by related literature, factors of VA, TA, TSO, SECURITY, and Trust (TRUST) were identified as relevant website traits that impact customers' PI, and five hypotheses were posited (H1, H2, H3, H4, and H5). The hypotheses proposed that all these independent variables are significantly and positively related to online purchase intention. From the quantitative analysis, all five website characteristics were confirmed to be determinants of website-induced fast food PI. These outcomes are all in line with recent earlier studies as a few examples will illustrate.

On the time-saving nature of a fast food website and purchase intention, people would be more inclined to want to purchase from organizations that create time-saving opportunities in addition to them being secure (Pallathadka & Pallathadka, 2022). Also, many other studies confirm the same (Xiong, 2022; Alzoubi et al., 2022).

The Audio-visual nature of fast food websites and purchase intention is also in line with Pilloi, Kim, and Haldorai, (2022)'s conclusion that website audio-visuals enhance website features. This can be explained by its' nature of combining visual aesthetics and semantic information, which has been shown to result in positive customer perception (Alcaraz et al., (2022). This implies that to stimulate customers' fast food purchase intention, company websites should combine visual aesthetics and semantic information. For business practitioners, the layout of their online advertisements websites should provide both succinct product functionality such as health attributes as well as attractive visuals such as good colour mix in containers and store environment. Environment and packaging with high arousal value (Vieira, 2010). Colourful can also act as product or business differentiators (Labrecque & Milne, 2013).

On the relationship between fast food website security and Risk with purchase intention, it is generally accepted that people are concerned about technology's ability to gather sensitive personal data and the possibility of losing control over it (Tran & Nguyen, 2022). When security is perceived as lacking in any prompting for specific behaviours, feelings of the indeterminacy on potential consequences of behavior and eventual failure and dissatisfaction with those results are heightened (Rehman et al., 2020; Farzi et al., 2022; Rehman et al., 2020). These risk perceptions are even more important for online purchase decisions because, in virtual environments, consumers can't test products physically (Rehman et al., 2020). Both Lin et al, (2020), and Tran and Nguyen (2022) conclude that security and privacy build up trust in online transactions and produce a positive effect on customers' buying decisions.

On the relationship between Trust in fast food websites and purchase intention, when people perceived a website as offering a relative advantage over others, it can naturally lead to feelings of trust (Jadil et al, 2022); Hsu Y Hsu (2014), trusting belief is viewed as the individual's perceptions of online vendor attributes, which are the honesty, integrity, and benevolence of e-retailers. The concept of trust as an attitude can be referred to as positive or negative feelings toward online sellers (Kim, 2012). Finally, Eastlick and Lotz (2011) conceptualized online trusting intentions towards the website as the consumer's willingness to rely on and depend on an online retailer; Several researchers in online shopping examined numerous antecedents of online trust (Agag & El-Masry, 2016; Al-Debei et al., 2015; Hsu & Hsu, 2014; Lim, 2015). For example, one such study that took place in Taiwan found security and privacy to have an important role in predicting trust toward using e-commerce platforms (Hsu & Hsu, 2014). Additionally, Al-Debei et al. (2015) provided useful insights by indicating that online shopping trust was enhanced by electronic word of mouth. Moreover, a study in Malaysia reported that experience in electronic shopping has a considerable effect on consumers' trust perceptions (Agag & El-Masry (2016b; Jadil et al., 2022).

On the Relative advantage of a website offering and the PI, it can be safely concluded there would be many aspects of websites that give a business a competitive edge over its competitors. Al-Abbadi, (2022) and Lim et al, (2022) agree that websites offer relative advantages to businesses. The advantages can flow from many other factors such as those identified in the present study because websites present mental images of food items (Balasudarsun et al., 2022).

IMPLICATIONS OF THE STUDY AND CONCLUDING REMARKS

This study was the first attempt to understand factors that motivate consumers to use website technology in the fast food purchase decision for a developing country like South Africa. It contributes to the extant marketing literature in several ways. First, most of the prior studies in fast food marketing on consumer intention do not specifically isolate relevant website characteristics to fast food businesses in a developing economy context. They, therefore, provide little insight into the reasons for the customer's intention to purchase fast food and to diffuse their brand experience among peers. Building on the BRT framework, the study has proposed a model that links website features and consumers' purchase intention. In so doing, the study enriches the existing collections of website characteristics and thus extends the application boundaries of the BRT to the fast food sector. It, therefore, opens up new avenues for possible qualitative studies that would further interrogate why these factors work in improving their purchase intentions. The study can also be replicated in other developing economies' contexts. For management practitioners, there are positive offshoots as well. Based on the study findings, a business should strive to enact convenient protocols and procedures of payment that are safe and secure (Ali & Aziz, 2022; Farzin et al., 2022). Fast food managers stand to benefit from streamlined issues that need to be in place when using website technology. This should go a long way towards limiting their technology expenditure budgets.

LIMITATIONS, FUTURE SCOPE, AND CONCLUDING REMARKS

As a result of the inclusion of generations Y and Z, and the exclusion of other population groups in this study, future research may include investigations to better understand the similarities and disparities between the perspectives of the various South African generational groups. To further understand the model and increase the quality and reliability of the results, future research could incorporate a qualitative component into the framework described in this paper. Similarly, the other industries can be integrated into the proposed framework and compared before the outcomes can be generalized.

ACKNOWLEDGMENTS

This research has been conducted at the University of the Witwatersrand with no independent funding. The authors are, therefore, grateful to the University for providing library facilities to conclude the work.

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Influence of online sensory branding experiences on brand loyalty in South Africa

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ABSTRACT

E-commerce is becoming one of the most popular forms of online activity. However, as online shopping increases, consumer commitment to brands decreases. To remedy this, brands are creating memorable brand experiences, of which specifically sensory experiences have been highlighted within the skincare brand of industry. There is a dearth of sensory branding being implemented online, which can be viewed as a forgone opportunity in a marketing context. The study aimed to investigate the sensory experiences desired by customers in South Africa when purchasing skincare products online, and the effects thereof on brand loyalty. This study made use of a positivistic research paradigm and a descriptive research design. The sampling procedure utilised in this study was non-probability sampling and the technique used was convenience sampling. The sample comprised of 321 consumers who had purchased skincare online at the time of the study and a web-based self-administered questionnaire, distributed via a link on Facebook, Instagram and LinkedIn, as well as by distributing the questionnaire via email to an existing mailing list, was used to collect the data. Once the data was collected, both descriptive and inferential statistics were utilised to analyse and interpret the data. The results of the study indicate that South African consumers are seeking sensory experiences online, and that digital visual, tactile and olfactory stimuli are especially sought after. It is therefore recommendable that skincare brands make use of strategies such as GIFs, "unboxing" videos, affordable sample packs and instalment payments.

Keywords: Sensory branding; multi-sensory experiences; brand loyalty; digital sensory branding; skincare branch of industry

The authors have no funding sources to disclose.

The use of the content study has been approved by the organisation (Research Ethics Committee (Human): The REC-H committee), ethics approval number: [H22-BES-MRK-010].

The authors declare they have no conflict of interest.

Informed consent was obtained from all individual adult participants included in the study.

INTRODUCTION

The skincare industry is the second largest segment of the beauty industry (Howarth 2023; Kolmar 2023; Petruzzi 2023) and is characterised as being highly saturated and competitive (Howarth 2023; Mordor Intelligence 2021; Peterson 2023), resulting in consumers having higher expectations of their personal care products (Cosmetics Business 2020; Rawat 2020). Bowling (2020) adds that there is a correlation between age and spending, whereby older consumers are more likely to spend more on skincare. However, during the COVID-19 pandemic higher lockdown levels were enforced globally (Onyeaka, Anumudu, Al-Sharify, Egele-Godswill & Mbaegbu 2021:1), restrictions were placed on shopping in-stores (Heiberg & Winning 2020; OECD 2020), which led to an increase in e-commerce (Bouzenita & Boulanouar 2016:60; Ecommerce News 2021; Fallatah & Syed 2017:19; Gerstell et al. 2020:2; Hoeschele 2016:1; Kashuba 2021; McLeod 2020; Nyrop, Nathan, Lindquist & Karlsen 2020, 1).

Djordjevic (2021) states that consumers are opting for online shopping over in-store shopping, with a rise from 1.66 billion global digital buyers in 2016 to over 2.14 billion global digital buyers in 2021 (Coppola 2020). Moreover, e-commerce sales are projected to reach 5.4 trillion US dollars in 2022 (Sabanoglu 2021). The popularity and growth of the online shopping industry has been attributed to its association with affordability and convenience (Arora & Aggarwal 2017:92; Djordjevic 2021) and has increased as a result of the global COVID-19 pandemic (Bouzenita & Boulanouar 2016:60; Ecommerce News 2021; Fallatah & Syed 2017:19; Gerstell et al. 2020:2; Hoeschele 2016:1; Kashuba 2021; McLeod 2020; Nyrop et al. 2020:1).

The benefits that businesses can reap from e-commerce, are numerous such as a larger target audience, decreased costs, the elimination of supply issues, the improvement of supply chain strategies and an opportunity to enhance their competitive advantage through ease of information sharing (Hanson, Hitt, Ireland & Hoskisson 2016:11; Kinda 2019:3; Kumar & Nagendra 2018:14). However, Li et al. (2018:3023) argue that this can also pose a challenge to businesses as consumers experience information overload. The use of e-commerce has increased the number of consumers reached by businesses vastly and while this can lead to positive outcomes, it also amplifies the possibility for negative feedback, such as negative ratings or comments (Hulten 2020:9). Morris (2020) along with Robertson (2020) adds that as online shopping increases, consumer commitment to brands decreases.

The decrease in brand loyalty can be attributed to the fact that there are more avenues for error to occur when shopping online (Robertson 2020), due to consumers having less disposable income, intensified by the economic crisis brought on by COVID-19 (Al-Adwan 2020:280; Charm et al. 2020; Morris 2020), convenience (Charm et al. 2020; Morris 2020) and an increase in competition both online and offline (Bhaskar & Kumar 2015:489). In an attempt to address this, brands are relying on how their products make the consumer feel (Alirezaeslambolchi & Erfanalhoseynihamedani 2017:45; Beig & Nika 2019:1; Liegeois & Rivera 2011:15), which can be achieved through the creation of memorable brand experiences.

Gao & Lan (2020:2), Hulten (2017:1) and Kim & Chao (2019:10) recognise that there is a direct relationship between brand experience and the longevity of a brand. Therefore, it is key for marketers to gain insight into how their brand is experienced by consumers and what tools can be utilised to build customer relationships. The importance of recognising customer experience as an important factor has roots in the work of Holbrook and Hirschman (1982:1), as well as Hirschman and Holbrook (1982:1), and the notion has grown in popularity ever since. As stipulated by Gao and Lan (2020:2) and Hulten (2017:1), a vehicle for creating memorable brand experiences is the utilisation of multi-sensory experiences, which will be discussed in more detail later in this article.

PURPOSE OF THE STUDY

This study aimed to investigate consumer desired sensory branding strategies when shopping online for skincare products in South Africa. Despite the global shift towards technology, only a few studies have been conducted on digital sensory branding strategies (Abdullah et al. 2018; Petit, Velasco & Spence 2018). Moreover, there is a limited amount of research on the sensory branding of skincare products (Almomani 2020; Grandin et al. 2020; Huang & Lu 2020; Levrini & Jeffman dos Santos 2021; Sakhawat 2019). Therefore, the study contributes to academic research by conducting an investigation into digital sensory branding strategies and then contextualising the literature findings for skincare businesses. Finally, a conceptual model was created from the literature review to demonstrate the desirable sensory branding strategies for skincare products sold online. The theories and models utilised to contextualise the conceptual model of this study are discussed in the following sections.

THE EXPERIENCE ECONOMY

The experience economy was introduced by Pine & Gilmore (1999:12) and encompasses the use of consumer-centric experiences to create value and in marketing a product, service or brand (Carù & Cova 2016:272; Ferreira & Sousa 2020:572; Homburg, Jozić & Kuehnl 2017:378; Suardi 2019:15), thereby making the product or brand memorable to the consumer (Pine & Gilmore 1999:12; Same & Larimo 2012:482). Pine & Gimore (1999:14) went further by creating the experience model to depict that an experience can only be successful if both parties, the brand and the consumer, are involved. It is posited that a memorable brand depends on consumer involvement or participation as well as the ability of the brand to either create an entertaining, educational, esthetic or escapist experience (Pine & Gilmore 1999:102; Same & Larimo 2012:483).

Brand experiences are the result of a number of consumer-centric experiences (Hollebeek & Macky 2019:163; Hollebeek et al. 2019; Islam, Hollebeek, Rahman, Khan & Rasool 2019:7; Lemon & Verhoef 2016:70; Rather 2019:19) and are intentionally created by a business to attract attention and interact with customers in an attempt to position themselves in the minds of consumers. The Strategic Experience Framework was created by Schmitt (1999) who categorised experiences into five dimensions, namely feel-related experiences, cognitive experiences, act experiences, relate experiences and sensory experiences. While there are many avenues of brand experience (Schmitt 1999), within the skincare branch of industry, sensory experiences have been highlighted as being of paramount importance, relating to factors such as texture, fragrance and packaging of the products (Cosmetics Business 2020; Moeglin 2015; Singh 2020; Whitehouse 2017).

Sensory marketing model

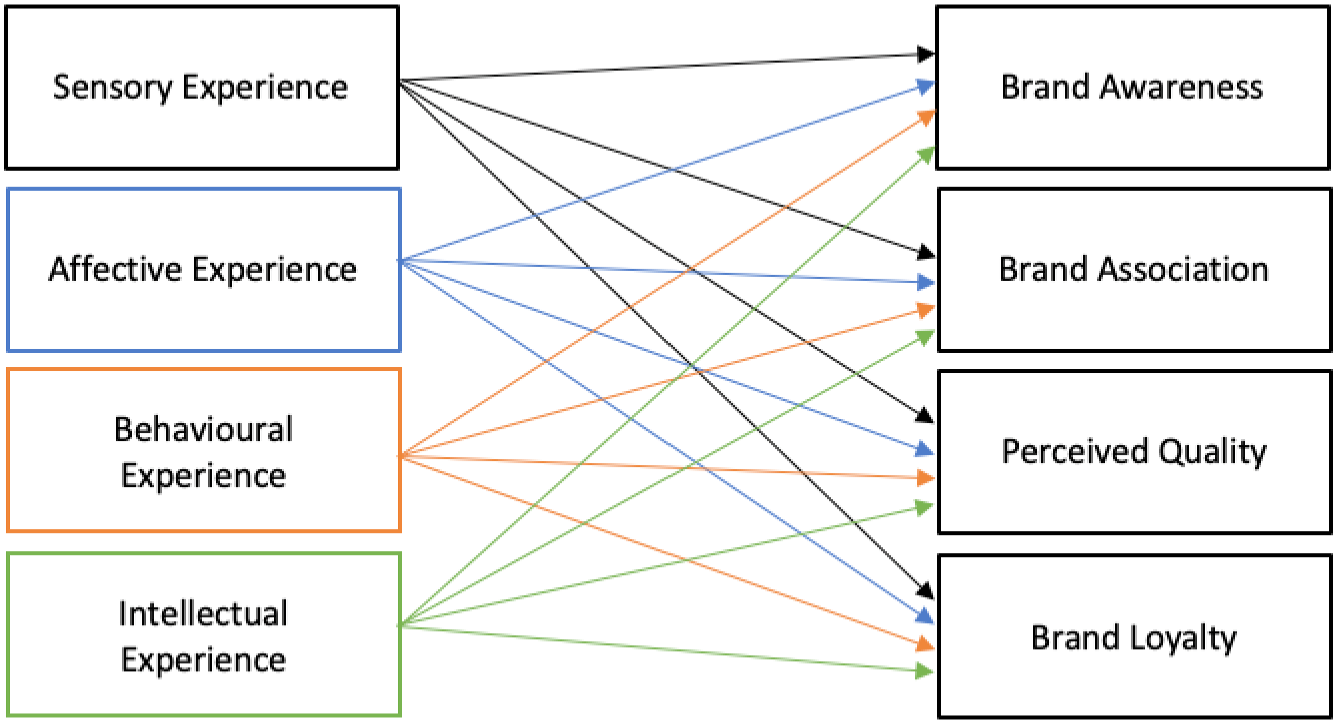
Sensory experiences relate to the use of the five human senses (sight, smell, hearing, taste and touch) to create memorable interactions for the consumer (Beig & Nika 2019:3; Ong et al. 2018:5; Suardi 2019:16) and have been highlighted as one of the strongest dimensions of experience (Gao & Lan 2020:2; Hulten 2017:1). The sensory marketing model signifies that based on the perceptions made by individuals as a result of the sensory stimuli of a product or brand, they will have certain emotional and cognitive reactions, which in turn influence their overall attitudes, learning and behaviour (Hulten 2020:14). However, the most effective use of sensorial marketing is when a number of the human senses are stimulated simultaneously or throughout an experience to achieve a multi-sensory experience. The importance of brand experience can be attributed to its ability to aid in predicting consumer behaviour in terms of brand loyalty (Harris, Kluppel-Strobel & Shakhiry 2017:1; Kim & Chao 2019:10) and in turn, enhancing brand equity (Beig & Nika 2022:157).

BRAND EQUITY

Consumer-based brand equity (CBBE) is defined as the effect of consumers' awareness and knowledge of a brand on their response to marketing of a product offering from a brand (Algharabat, Rana, Alalwan, Baabdullah & Gupta 2021:8; Chatzipanagiotou et al. 2019:328; Koay, Ong, Khoo & Yeoh 2019:55; Narteh 2018:381). From the brand equity model developed by Aaker (1991; 1992), five components of brand equity are identified. However, in a marketing context, only four are relevant, namely brand awareness, brand association, perceived quality and brand loyalty.

A model of the influence of brand experience on brand equity

As reported by Brakus et al. (2009:54) and Ramaseshan & Stein (2014), brand experience is directly related to brand loyalty, which is depicted in Figure 1.



Source: Adapted from Beig & Nika (2022:161)

FIGURE 1
A MODEL OF THE INFLUENCE ON BRAND EXPERIENCE ON BRAND EQUITY

This study focused specifically on sensory experiences as the independent variable, as they are highlighted as one of the predominant dimensions of experience and the importance of which has been emphasised in the online sale of skincare products. Brand loyalty was selected as the dependent variable as it has been noted as the predominant determinant of brand equity.

Brand loyalty

Brand loyalty has become a cause for consideration, attributed to its role in facilitating competitive advantage and financial benefits (Tartaglione, Cavacece, Russo & Granata 2019:1). As defined by Aaker (1991:39), Algharabat et al (2021:9), Beig and Nika (2022:160), Narteh (2018:385) and Tasci (2018:149), brand loyalty is how attached a customer is to a certain brand and Tartaglione et al (2019:1) adds that a successful brand loyalty building strategy should result in repurchase intention (RI), the generation of positive word of mouth (WOM), as well as consumers being willing to pay more (WPM), which is agreed upon by Alexandra and Cerchia (2018:423), Foroudi, Jin, Gupta and Foroudi (2018:10), Giovanis and Anthanasopoulou (2016:2), Haung, Liao, Wang and Lin (2018:2132), as well as Saif, Ahmed, Shareef and Khalid (2018:67).

However, there is a distinct difference in consumer loyalty to a brand based on demographic features such as gender (Burke 2021; Infante, Calixto & Campos 2016:137; Melnyk, Osselaer & Bijmolt 2009:83; Ndubisi 2006:50), age (Gudat 2018; Klopotan, Buntak & Drozdjek 2014:488; Marketing Charts 2018; McDougall 2015) and education level (Klopotan et al 2014:488; McDougall 2015; Sun, Foscht & Eisingerich 2021:2; Vince 2021). Moreover, as observed in the study of Robertson (2020), of late, there is a definite decrease in consumer devotion to brands, which is attributed to an increase in online shopping or e-commerce.

Al-Adwan et al (2020:280), Charm et al (2020), as well as Morris (2020), report that the loss of brand loyalty that is being observed with e-commerce is due to consumers having less disposable income, intensified by the economic crisis brought on by COVID-19. Additionally, convenience (Charm et al 2020; Morris 2020) and an increase in competition both online and offline (Bhaskar & Kumar 2015:489) have been identified as driving forces behind the decrease in consumer loyalty with reference to e-commerce. Another theory that is posited by Foster (2020) and Morris (2020), is that prior to the internet, consumers relied on the brand itself to inform them of quality of the product offering. However now they have access to other consumers who may have different information (Anastasiei & Dospinescu 2019:1; Herrera, Leon & Vargas-Ortiz 2018:78; Li & Du 2017:338; Li, Yang, Wu, He & Zhao 2018:512). However, a conflicting view is that consumers have altered their brand preference based on necessity, and will therefore transition back when they have the opportunity to do so (Foster 2020; Morris 2020).

SENSORY BRANDING ONLINE

While the skincare branch of industry is expected to remain relatively resilient irrespective of the economic recession (Gerstell et al. 2020:2), Sarathy (2020) cautions that consumers are no less demanding of brands online, and are still expecting engaging sensory experiences that they would receive in-store.

Hulten (2020:9) adds that any time that individuals make use of online or digital platforms to communicate or exchange information, it should be considered a multi-sensory experience. However, there is a lack of sensory branding being implemented online, which can be viewed as a forgone opportunity in a marketing context (Kaushik & Gokhale 2021:5377; Petit et al. 2018:42). While marketers try to implement new interactive and sensory-enabling technologies into the “webmosphere” of the brand (Petit et al. 2018:42), many digital innovations fail due to consumer resistance (Talwar et al. 2020:287), especially from older consumers who are slower to adopt new technology (Vaportzis, Clausen & Gow 2017:2). With specific reference to the sales of skincare products online, visual, auditory, olfactory and tactile stimuli have been found to be relevant and were therefore selected as the sub-variables of this study.

Digital Visual branding

Sight as a sense in retail encompasses how consumers make use of their eyes to experience a product or brand (Cowen-Elstner 2018:23; Hulten 2020:58; Pogorzelski 2018:84). The digital space is placing increased worth on the use of visual stimuli in marketing a brand or product, evident in the use of digital photos, movies, trailers and all other internet advertising (Hulten 2020:59; Petit et al. 2018:44). Digital sensory strategies share some aspects that are used in traditional sensory strategy, such as the colours used by a brand, logo design and packaging design. However, instead of considering ambient features of a store, digital strategies must consider the webmosphere of the digital platform, such as the layout and user friendliness of websites. Additionally, the use of colour as backgrounds on digital market spaces have been proved to influence consumers perception of a site as well as their perceived download speed (Broeder & Snijder 2019:7; Broeder & Wildeman 2020:76; Cowen-Elstner 2018:24; Patel 2021).

The digital world is rapidly advancing, bringing about new means to incorporate online sensory strategy, that enables a richer consumer experience (Griffith 2020). With specific reference to digital online visual strategy, the use of 3D imaging (Algharabat et al. 2017:223), virtual reality environments (VR) (Griffith 2020; Petit et al. 2019:44) and virtual try-ons (VTO), or augmented interactive (AI/AR) technology (Griffith 2020; Huang & Liao 2017:449) are becoming popular. Algharabat et al. (2017:204) explain that as opposed to a static 2-dimensional image, 3D imaging allows consumers to have a 360-degree view as they move their mouse over the product image. Furthermore, Petit et al. (2019:44) opine that VR environments provide consumers with a more interactive and immersive experience. Finally, VTO’s is an AI technology, which enables a consumer to either create a look-alike avatar of themselves, or to upload an image of themselves, so that they can better evaluate what a product may look like, solidifying buying decisions (Huang & Liao 2017:450; Petit et al. 2019:48). From the literature on digital visual sensory branding, the following hypothesis was derived.

H1a There is a significant relationship between digital visual sensory strategies and brand loyalty.

Digital Auditory branding

Auditory stimuli in marketing refers to the use of sound to influence consumer behaviour (Bartholme & Melewar 2016:420; Cowen-Elstner 2018:28; Foroudi & Palazzo 2019:136; Galande 2019:48; Hulten 107:6; PH Media 2021; Pogorzelski 2018:86; Shanthi et al. 2019:205). In many cases, the strategies used in brick and mortar stores can be carried through to digital stores. Auditory cues, with reference to marketing, can include the use of brand jingles and the sound or pronunciation of the brand's name (Foroudi & Palazzo 2019:136; Hulten 2020:93; 2017:6; Wala, Czyrka & Fras 2019:112) and Wala et al. (2019:112) states that traditionally, sound has been used by businesses to transfer messages or information about a product or brand in the form of radio or television, but as the internet has advanced so has the use of auditory stimuli. Another means of making use of auditory sensory strategy online, is through video adverts and background music (Hulten 2020:99). From the literature on digital auditory sensory branding, the following hypothesis was derived.

H1b There is a significant relationship between digital auditory sensory strategies and brand loyalty.

Digital Olfactory branding

According to Upadhyaya (2017:353), smell is the most sensitive of the five human senses, the strength of which lies in its ability to create strong feelings of reminiscence (Hulten 2017:7; Pogorzelski 2018:86; Shanthi et al. 2019:206; Vega-Gomez et al. 2020:1). However, as of yet, there is no technology that can replace physical smell via an online platform. Many marketers still try to make use of product specific olfactory strategies on their digital platforms by making use of imagery and descriptive words (Alac 2017:143; Cowen-Elstner 2018:31; Hauser 2017; Hulten 2020:127). By doing this, marketers hope that just seeing the image or hearing about the smell, will enable individuals to make the same associations as if they could physically smell the product.

Another strategy which is being used is the distribution of "scratch-and-sniff" cards, where companies provide a URL or scannable code for consumers to visit, upon which they can scratch the card and actually smell the product while they read about it (Hulten 2020:128). Finally, researchers are continuously working on developing multisensory devices that will enable olfactory stimuli to be delivered to consumers via the internet. From the literature on digital olfactory sensory branding, the following hypothesis was derived.

H1c There is a significant relationship between digital olfactory sensory strategies and brand loyalty.

Digital Tactile branding

To try and simulate the sense of touch, marketers make use of other human senses to stimulate deep rooted associations people have in their memory, such as through the use of high-quality images and descriptive words (Yoganathan, Osburg & Akhtar 2019:388). Another strategy company's make use of online is the option to have the item delivered, and then returned within a certain amount of time should the consumer not be satisfied (Hulten 2020:147; Peck 2020). However, it should still be noted that the likelihood of consumers purchasing products, which require multi-sensory analysis online, is not high, which has led to consumers evaluating brands in brick and mortar stores and then actually purchasing the item online from where it may be cheaper. Skrovan (2017) adds that there is a correlation between age and this phenomenon, whereby older consumers are more likely to fist visit an establishment to touch and assess the product before purchasing online.

Consumers interact hepatically when shopping online just by touching their mouse or touchscreens (Petit et al. 2019:49). There are numerous technological developments, which have been found to better the haptic interactions individuals have when shopping online (Brengman, Willems & Van Kerrebroeck 2019:272; Chung, Kramer & Wong 2018:796; Van Kerrebroeck, Helena & Brengman 2017:894). However, these technologies are not yet widespread, and a more cost-effective solution would need to be reached before they could become accessible to more companies, such as through the use of vibrations on a smartphone (Olsson 2015:18; Petit et al. 2018:51). While the applications of virtual reality technology are endless, it is a nascent technology (Lin 2022). From the literature on digital tactile sensory branding, the following hypothesis was derived.

H1d There is a significant relationship between digital tactile sensory strategies and brand loyalty.

METHODOLOGY

A positivistic research paradigm and a descriptive research design, which is associated with a quantitative approach, was used to conduct this study, with a sample population of 321 consumers who had purchased skincare online in South Africa, which equated to a response rate of 86.3%. Respondents were selected via convenience sampling, a category of non-probability sampling, and the data was collected via a web-based self-administered questionnaire, a form of online survey. A link to the questionnaire, accompanied by a detailed cover letter, was posted on social media platforms as well as distributed via a mailing list. The questionnaire of this study constituted six sections, but prior to the main sections of the questionnaire, respondents were also asked to answer screening questions which related to consent as well as whether they had purchased skincare online to ensure they met the requirements of the target audience for this study. Section A of the questionnaire made use of dichotomous or closed-ended questions to gather demographic details of the respondents, such as their age, gender, average monthly budget and frequency of online purchases of skincare. Section B – F collected data relating to the variables of the study. Primary data was collected from respondents via a 5-point Likert scale, where responses of 1 (very positive) and 2 (positive) were grouped and indicative of a positive influence and responses of 4 (negative) and 5 (very negative) were grouped and indicative of a negative influence. A neutral response (3) would indicate that the respondent was indifferent regarding how a certain factor influenced their experience of shopping for skincare products online. The use of 5-point Likert scale questions was appropriate as it allowed the researcher to determine to what extent each factor influenced the experience of shopping for skincare products both in-store and online, rather than just whether they did or did not. From the data collected, mean scores could then be calculated per question.

The primary data collected was organised into an Excel spreadsheet. Prior to subjecting the data to STATISTICA, it was edited and coded to make for appropriate statistical analysis, in terms of both descriptive and inferential statistics. For the purpose of this study, descriptive statistics were utilised to explain the data, constituting frequency distributions, means and associated standard deviations to summarise the sample data. To determine whether statistically significant differences in opinions occurred, ANOVA’s and Welch-Robust Tests were used and where significant differences were identified, Tukey Post Hoc Test and Games-Howell Test were calculated to identify specifically where the significant difference occurred ($p<0.05$ or $p < 0.10$). Through the use of inferential statistics, inferences could be made about the population of the study (Wilson & Joye 2017:78). All primary data of this study were statistically analysed using the latest edition of IBM SPSS Statistics version 28.

To ensure content validity, previously tested items were used to construct the questionnaire. CFA was computed to test the measurement models relating to digital sensory branding. As part of CFA, factor loadings were assessed for each item, and with reference to the model relating to digital sensory branding, only item E11 (the use of interactive software influences my experience of shopping for skincare products online) was removed. Hereafter, the model-fit measures were used to assess the model’s overall goodness of fit (CMIN/df, SRMR/GFI, CFI and RMSEA), and, after the necessary modification indices were applied, it was determined that all the model-fit measure values were within their respective common acceptance levels (Hair et al. 2019:636; UCLA 2021; Brown 2015:86). Therefore, it can be deduced that the four-factor model (digital sensory branding) yielded good fit.

Cronbach alpha coefficients calculated for each of the variables constituting digital sensory branding presented values between 0.78 – 0.88, and an average inter-item correlation ranging between 0.42 – 0.57, indicating that there was consistency in the values. Furthermore, all Cronbach alpha values calculated for the variables and sub-variables of the study are above the suggested 0.7 cut-off value proposed by Nunnally (1978), therefore, the measuring instrument was reliable and valid.

Bias is in this study was avoided through the use of a relatively large sample size as well as through gathering demographic information on the respondents. Moreover, as the items in the questionnaire were previously tested, they were not leading in anyway and the respondents of this study were anonymous and the researcher therefore, had no way of selecting respondents.

RESULTS: DESCRIPTIVE STATISTICS

From the data collected, 80% of the 321 respondents were female and 53% were over the age 45 years. Furthermore, more than half of the respondents (52%), had an average monthly budget for skincare of R501 – R1000, while another 34% indicated that they had an average monthly budget of R1001 – R1500 for skincare. It was further deduced that older respondents of this study were willing to spend more per month on skincare then younger respondents. Additionally, 45% of the respondents indicated that they purchased skincare products online once every few months and the second most popular answer was that respondents purchased skincare products online once a month (23%).

RESULTS: INFERENTIAL STATISTICS

For the purpose of this study, a SEM model was utilised to determine whether a relationship existed between digital sensory branding and brand loyalty. It was found that item D9 (the use of virtual reality technology to replicate the olfactory stimuli influences my experience of shopping for skincare products online) and item D10 (the use of third-party technology influences my experience of shopping for skincare products online) had a high MI (68.98) and they were therefore co-varied. Table 1 presents a summary of the regression weights table output.

TABLE 1
A SUMMARY OF THE REGRESSION WEIGHTS RELATING TO DIGITAL SENSORY BRANDING AND BRAND LOYALTY

Factor	Regression weights summary at start					Regression weights summary at end				
	Est.	S.E.	C.R.	P	Std. Est.	Est.	S.E.	C.R.	P	Std. Est.
Brand loyalty <--- Digital sensory branding	0.25	0.07	3.64	<0.01	0.34	0.26	0.07	3.66	<0.01	0.34

From Table 1, it can be seen that there was a significant ($p < 0.05$) relationship between digital sensory branding and brand loyalty, with $p < 0.01$. However, the relationship was relatively weak, as determined by the standardised regression weight estimate of 0.34 respectively. Model-fit measures were used to assess the model's overall goodness of fit (CMIN/df, SRMR/GFI, CFI and RMSEA), presented in Table 2.

TABLE 2
MODEL FIT SUMMARY FOR DIGITAL SENSORY BRANDING

Factor	Model fit summary at start				Model fit summary at end			
	CMIN	SRMR	CFI	RMSEA	CMIN	SRMR	CFI	RMSEA
Digital sensory branding	3.78	0.11	0.82	0.93	3.58	0.11	0.83	0.09

It can be seen that the CMIN and RMSEA values, both at the start and at the end, are within their common acceptance levels for adequate model fit. However, the SRMR and CFI values, both at the start and at the end, are outside of their common acceptance levels. Therefore, it can be deduced that the model yielded a marginal to poor fit. Figure 2 provides the graphical representation of the SEM model for digital sensory branding and brand loyalty, where the following abbreviations are utilised; digital sensory strategies (digital); digital tactile stimuli (DTS); digital visual stimuli (DVS); digital olfactory stimuli (DOS), and; digital auditory stimuli (DAS).

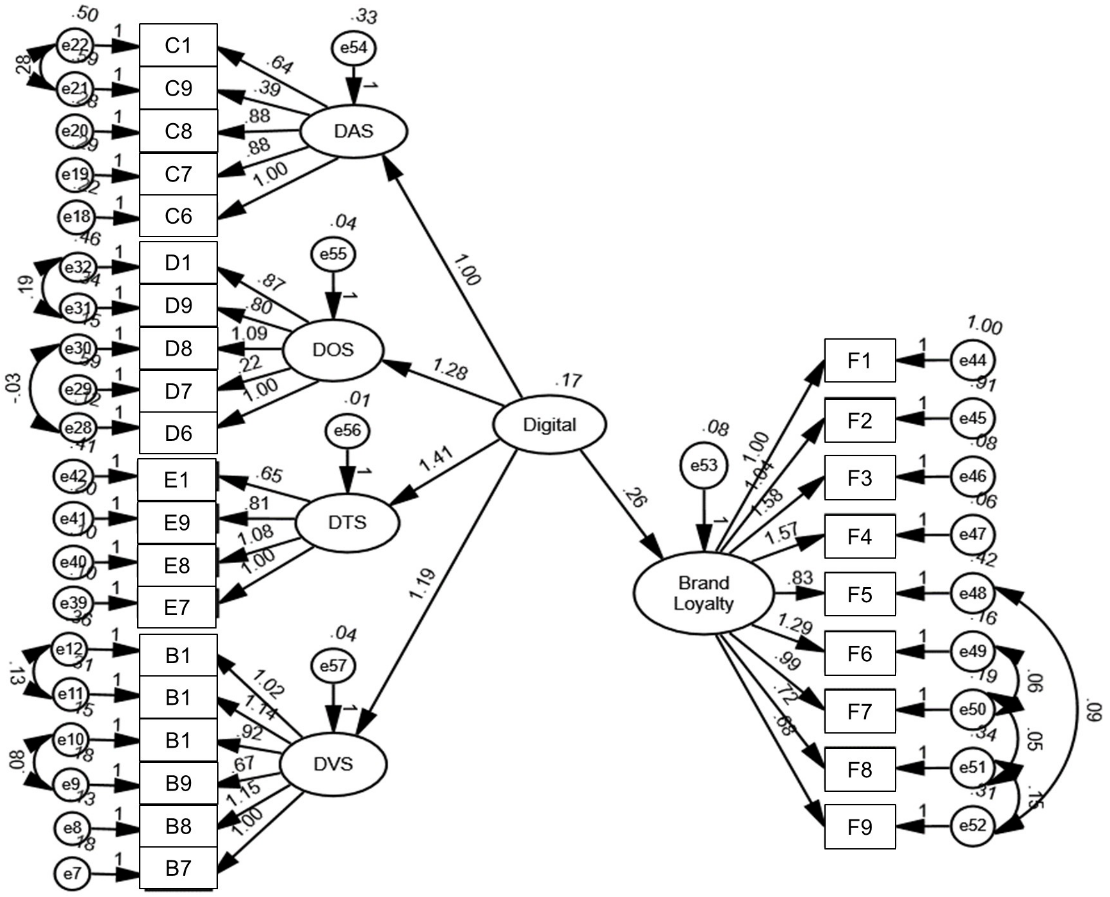


FIGURE 2
THE SEM MODEL FOR DIGITAL SENSORY BRANDING

Furthermore, to determine whether or not any relationships existed between the sub-variables of this study (digital visual, auditory, olfactory and tactile stimuli), and brand loyalty, a Primary Model was conducted, the results of which are presented in Table 3.

TABLE 3
A SUMMARY OF THE REGRESSION WEIGHTS RELATING TO THE FULL DIRECT MODEL

Factor	Regression weights summary				
	Est.	S.E.	C.R.	P	Std. Est.
Brand loyalty <--- Digital visual stimuli	-0.07	0.04	-1.82	0.07	-0.11
Brand loyalty <--- Digital auditory stimuli	0.00	0.03	-0.01	0.99	0.00
Brand loyalty <--- Digital olfactory branding	-0.10	0.06	-1.77	0.08	-0.11
Brand loyalty <--- Digital tactile branding	0.13	0.04	3.32	<0.01	0.24

From Table 3 it can be seen that of all the digital sub-variables, only digital ($p < 0.01$) tactile stimuli had a significant ($p < 0.05$) relationship with brand loyalty. It can further be seen that significant ($p < 0.10$) relationships exist between digital visual stimuli ($p < 0.07$) and digital olfactory stimuli ($p < 0.08$) and brand loyalty.

DISCUSSION

The literature relating to digital sensory branding indicates that consumers are no less demanding of a brand online than they are in-store with regard to sensory stimuli (Sarathy 2020) and sensory marketing is essential in implementing experiential marketing (Foroudi & Palazzo 2019:132; Galande 2019:47) and therefore, brand loyalty.

This could explain the significant relationship between digital sensory branding and brand loyalty ($p < 0.01$) observed in the SEM model conducted. Therefore, it can be concluded that hypotheses H1 (there is a significant relationship between digital sensory branding and brand loyalty) was supported through the results of this study.

With regard to digital tactile stimuli, it was deduced that respondents of this study were divided regarding how interactive software influenced their experience of shopping for skincare online, with 47% of respondents agreeing and 13% disagreeing that interactive technology had an influence on their experience, and 39% being indifferent. This was attributed to the fact that it is relatively new technology and therefore some may have not yet been exposed to it, which was similarly opined by Lin (2022), Olsson (2015:18) as well as Petit et al. (2018:51). It was also determined by the results of this study that respondents felt that high quality images and descriptive language had a positive influence on their experience of shopping online for skincare, supported by a mode and median value of 1 (very positive) for both factors, which was also postulated by Yoganathan et al. (2019:388). From the review of the literature, it was highlighted that an effective strategy that businesses use to overcome the challenge of a lack of touch, is the option to have the item delivered, and then returned within a certain amount of time should the consumer not be satisfied (Hulten 2020:147; Peck 2020). This strategy was also identified by the majority (92%) of respondents in this study as having a positive influence on their experience. From the Primary Model conducted, it was determined that digital tactile stimuli was the only sub-variable that had a significant ($p < 0.05$) relationship with brand loyalty, with $p < 0.01$. The possible reasoning for this may be attributed to the fact that touch is one of the principal sources of stimuli and is linked to ownership and valuation of a product (Cowen-Elstner 2018:25; Hulten 2017:8; Peck 2020; Perry 2017; Suarez & Gumiel 2014:269). It can therefore be deduced that consumers are seeking tactile stimuli even when shopping online, solidifying the literature that posits that the lack of tactile stimuli online is a challenge for brands with physical touch-related products (Hulten 2020:137; Yoganathan et al. 2019:388). It can be concluded that hypotheses H1d (there is a significant relationship between digital tactile sensory strategies and brand loyalty) was supported through the results of this study.

With regard to digital visual stimuli, it was deduced from the results of this study that visual stimuli is imperative to the sales of skincare products online, which supports the ideology that the digital space is placing increased worth on the use of visual stimuli (Hulten 2020:59; Petit et al. 2018:44). Furthermore, from the results of this study it was concluded that the webmosphere created is an important consideration, which was also found by Petit et al. (2018:42). The final conclusion drawn from the results relating to digital visual stimuli is that due to the relative newness of interactive technology, consumers may have differing views regarding how this factor influences their experience of shopping for skincare products online, which may address the claim by Talwar et al (2020:287) that consumers often show resistance to digital innovations.

With regard to digital olfactory stimuli, it was deduced that respondents of this study were divided regarding how scratch-and-sniff cards influenced their experience of shopping for skincare products online, with 59% of respondents agreeing that scratch-and-sniff cards had an influence on their experience and 36% indicating that they were indifferent regarding how this factor influenced their experience. This was attributed to the fact that some consumers may not have been exposed to this marketing tactic as it is relatively new (Hulten 2020:128), and would therefore, be indifferent towards it. It was further determined in the literature review that marketers make use of imagery and descriptive words to lead consumers to make associations regarding scent (Alac 2017:143; Cowen-Elstner 2018:31; Hauser 2017; Hulten 2020:127). This was affirmed by the result of this study, whereby the majority of respondents indicated that descriptive language (93%) and imagery association (87%) had a positive influence on their experience. Additionally, Ranasinghe et al. (2018) along with Petit et al (2019, 53), explain that new technology is being created to deliver olfactory stimuli via the internet and the majority of respondents in this study indicated that they felt that virtual reality technology (80%) and third-party technology devices (74%) had a positive influence on their experience.

It was further deduced that significant ($p < 0.10$) relationships exist between digital visual stimuli ($p < 0.07$) and digital olfactory stimuli ($p < 0.08$) and brand loyalty. Visual stimuli is the most common sensory stimuli made use of online (Griffith 2020; Petit et al. 2018:42; Sarathy 2020), which may explain why this had some direct relationship with brand loyalty. Furthermore, this study makes specific reference to the skincare branch of industry, where fragrance is a key factor in the decision on which product to purchase made by consumers (Singh 2020), which could explain why digital olfactory stimuli was highlighted in relation to brand loyalty. It can therefore be concluded that hypotheses H1a (there is a significant relationship between digital visual sensory strategies and brand loyalty) and H1c (there is a significant relationship between digital olfactory sensory strategies and brand loyalty) were supported through the results of this study.

Biswas (2016:219), Cowen-Elstner (2018:230), Foroudi & Palazzo (2019:136), Griffith (2020), Hulten (2020:93; 2017:6), Upadhyaya (2017:357) along with Wala et al. (2019:112), who posit that jingles used by a brand are a useful auditory branding strategy. However, with regard to digital auditory stimuli, the results of this study indicated that the majority of respondents felt that brand jingles either had no influence on their experience (33%) or were indifferent (52%) regarding how this factor influenced their experience online. The contradiction may be linked to the fact that the study of sensory branding online is still relatively new and therefore, specific sensory stimuli may have different outcomes online as opposed to in-store.

Cowen-Elstner (2018:29), Hulten (202:86) as well as Shaed et al. (2015:34) recognise a link between auditory and visual cues, which was also indicated by the results of this study. Moreover, multi-sensory experiences have been proven to be the most effective use of sensory marketing or branding (Helmefalk & Berndt 2018:1081; Hulten 2020:13; Imschloss & Kuehnl 2017:931). From this literature finding as well as the results of this study relating to the link between visual and auditory cues, the conclusion was drawn that these two sensory stimuli should be used simultaneously in online marketing to create multi-sensory experiences for consumers.

Additionally, the results of the Primary Model conducted indicate that there was no significant relationship between digital auditory stimuli and brand loyalty. Beig & Nika (2019:3), Ong et al. (2018:5) and Suardi (2019:16) explain that digital auditory stimuli constitute a segment of experience and experiences are known to have a direct relationship with brand loyalty (Harris et al. 2017:1; Kim & Chao 2019:10). Therefore, the relationship between digital auditory stimuli and brand loyalty may be indirectly through brand experience, rather than a direct relationship. It can therefore be concluded that hypotheses H1b (there is a significant relationship between digital auditory sensory strategies and brand loyalty) was rejected through the results of this study.

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

It can be concluded that with regard to e-commerce, South African brands need to find ways to still deliver the key sought after sensory stimuli, namely, visual, olfactory and tactile stimuli, in a viable way and that it is appealing to their target audience. While more common means of doing this, such as through the use of descriptive language and high-quality images, should constitute the online sensory branding strategy of a skincare brand, additional strategies should be included.

A recommendation for skincare brands in South Africa would be to use moving images such as GIFs, where the consumer can physically see the product being pumped or poured on to an individual’s skin, which will allow the consumer to more easily imagine what the feel of the product is. Moreover, skincare brands in South Africa can make use of brand ambassadors to create “unboxing” videos, whereby the ambassador films a short clip of them receiving their order of a brands product. From here the brand ambassador would explain the feel of the product packaging, the feel of the actual product, as well as the smell thereof, and provide some information on how they apply the product.

The results of this study indicated that in South Africa, younger consumers can afford to spend less on skincare per month then older consumers. Therefore, skincare brands who target this group of consumers need to find ways to make their products affordable. To accomplish this, it is recommended to offer affordable sample packs online. These packs could be created based on skin type, age or gender, and would include a number of sample size products that would last 1 - 2 weeks and would include instructions on how to use the products. This would enable consumers to physically test the products prior to spending larger amounts, which could boost initial sales and hopefully lead to an increase in consumer loyalty.

An additional recommendation, that relates to the result indicating that South African consumers have less disposable income per month due to the current state of the economy, is that skincare brands could offer lay-buy payment options through the use of PayFlex. PayFlex allows consumers to pay for their order over a number of months, rather than paying a lump sum. This system does not cost the consumer any extra and does not put the brand in debt as they receive their money upfront.

LIMITATIONS OF THE STUDY

As the concept of sensory branding online is still relatively new, there was a lack of reliable literature sources to support the study. Additionally, this study focused on the skincare industry specifically, and due to this, taste stimuli were excluded as there was no relevance. Moreover, the skincare industry in South Africa was considered so results may differ for other countries. Lastly, this study made use solely of web-based self-administered questionnaires to collect data, attributed to not only the nature of the study, but to the fact that it was conducted during the global COVID-19 pandemic.

FUTURE AREAS FOR RESEARCH

It is recommended that future research be conducted in the following areas.

- It is advisable that research be done on digital sensory branding strategies with reference to taste stimuli, as this was not included in this study.
- It may be necessary to conduct separate studies which focus on visual, auditory, olfactory and tactile stimuli with specific reference to e-commerce to gain better insights on desirable strategies. This could extend across various product categories.
- A comparison could be conducted on the sensory strategies desired online between demographic characteristics, such as age, gender or budget.
- An additional study could focus on specific key words that skincare brands should be using when selling products online, that would appeal to their specific target audience (age, gender).

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Factors Affecting Customers' Intention towards Online Purchase: An Empirical Study on Bangladesh

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ABSTRACT

The purpose of this study is to investigate the factors that influence online purchase intention in the context of Bangladesh, specifically focusing on the relationship between eWOM, Website Quality, Promotional Activities, Trust, Security, and online purchase intention. Convenience sampling method was employed to gather data from 260 participants through online and offline surveys between January and February 2023. The study employed different statistical methods to analyze research data including Descriptive statistics, Cronbach's Alpha, and Multiple Regression analysis. The results indicate that eWOM, Website Quality, Promotional Activities, and Trust have a significant impact on online purchase intention. Interestingly, security was not found to be a significant factor in determining online purchase intention. These findings contribute to online marketers' knowledge of the factors that influence customers' intention to buy products and services from online platforms and can assist them in developing value-driven online marketing strategies.

Keywords: eWOM, Website Quality, Promotional Activities, Trust, Security, Online purchase intention

INTRODUCTION

In today's world, the internet has become an indispensable part of human life which makes shopping easier than ever before. Bangladesh undoubtedly has a huge number of online shoppers, much like other emerging nations. E-commerce has grown constantly in a good manner and it covered almost all types of business such as B2B, B2C, etc. effectively (Rosen, 2002). In Bangladesh, e-commerce sites are now very convenient for both business and shopping. After COVID-19, online shopping in Bangladesh has been raised massively. B2C in Bangladesh is hoped to increase by almost 17.61% yearly from e-commerce (Karim, 2022). Bangladesh is expecting overall 72% growth in a year by E-commerce (Karim, 2022). There are about 35+ E-commerce sites in Bangladesh including Chaldal, Daraz, Ajkerdeal.com, Bikroy.com, Pickaboo.com, etc (Karim, 2022). But not only e-commerce sites but there is also an extensive number of Facebook pages and Instagram pages which are providing services and products online. These online platforms are especially opportune to save time. They are providing the products by home delivery, customization, favorable transaction systems such as cash on delivery, payment through Mobile Financial Services (MFS) bKash, Nagad, Rocket, etc., handy packaging, and so on. These types of facilities insist that customers use online platforms to purchase the products. Online shopping provides additional information about the products and more information about prices, and discounts (Al Debei et al., 2015; Li & Dan Zhang, 2002; Butler & Dan Peppard, 1998).

In Bangladesh as in other counties, the curiosity of customers rises because of eWOM. Nielsen (2008) ensured that eWOM increases the number of online shoppers by getting them to know about trust issues, positive reviews, etc. Website quality is another critical factor that influences online purchase intention among consumers. Customers are always looking for a user-friendly and organized website that is easy to find out the desired product without wasting time. (Hossain et al., 2021; Jeong et al., 2003). These types of facilities can create loyal customers (Parasuraman et al., 2005). Replying to customers' messages on time, on-time delivery, accessibility, trendy collection, and communication improve service quality and this fixes the trust of the customers (Zeithmal et al., 2002; Yang, 2001). Moreover, promotional activities directly motivate the customer by offering coupons, discounts, and sales and these determined the value of the products (Nagadeepa et al.,2015). Lastly, customers are willing to purchase from those sites which are liable to protect their personal information and personal identity because of the emergence of cybercrime. Customers' experience and satisfaction are dependent on security (Diligenti et al., 2004). Purchase intention is intrinsically the willingness to buy and it is affected by internal and external factors. Ajzen (1991) mentioned the intention as an indicator to quantify the willingness of the customers to do shopping.

Although many researchers investigated the factors affecting online purchase behavior in Bangladesh (Fatema, & Siddiqui, 2021; Rahman, & Rahman, 2020; Neger, & Uddin, 2020; Islam, 2019; Rahman et al., 2018), very scarce studies had been considered eWOM, Website Quality, Promotional Activities, Trust, Security, and online purchase intention in the context of Bangladesh altogether. Therefore, the primary objective of this research is to recognize the factors that influence the online purchase intention of consumers in Bangladesh which will address the existing gap in the literature and enhance the understanding of the online purchasing perspective.

The paper is organized as follows. The study starts by reviewing relevant online purchase literature, which results in the development of hypotheses and a conceptual framework. The research methodology is outlined next, and then the research findings are presented. Finally, the discussion, implications, conclusion, limitations, and future research directions are elucidated.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

ONLINE PURCHASE INTENTION

Online purchase is one of the peak priorities for people nowadays because of internet accessibility (Ariffin et al., 2018). Close & Kukar-Kinney (2010) acknowledged that willingness of online purchases is derived from purchase intention. According to Meskaran et al. (2013), online purchase is the eagerness to buy products or to have a service through the Internet. Online purchase intention can be diversified by the pricing strategy of the products whereas

Iqbal et al. (2012) also consented that online purchase intention is the enthusiasm to purchase products from online platforms by using internet access compared to the prices of the products. Consumers can mitigate their demand by direct purchasing from retailers through web browsing, Aldhmour & Sarayrah (2016) also mentioned that this communication with retailers rises intention. Online purchase intention gravitated a positive correlation with actual online purchase behavior (Lim et al., 2016).

ELECTRONIC WORD OF MOUTH (eWOM)

eWOM is the exchanging of marketing information to customers about the fundamental model, features of products, and services through the internet which is related to shaping the customer's behavior about having the products and services (Katz & Lazersfeld, 1966). eWOM has become an online relationship outcome by considering the online shopping behavior of the customers. (Hongyoun Hahn & Kim, 2009). It has both positive and negative impacts on the acquisition of new customers (Chung & Shin, 2010). In fact, eWOM is more effective than WOM in online shopping, retailing, and customer retention (Luo at el. 2013; Chung & Shin, 2010). Hussain et al. (2017) have claimed that customers prefer eWOM for online shopping to reduce risk. Social media is playing a tremendous role to spread eWOM to influence consumers in this competitive world where eWOM is the most powerful pre-purchase source of travel information (Sotiriadis & Van Zyl, 2013). eWOM aids people to make better buying decisions (Huete-Alcocer, 2017; Bronner & De Hoog, 2011). Almost 61% of online users worldwide prioritize eWOM before purchasing any goods or services (Charlton 2015; Floyd et al., 2014). Rahaman et al.(2022) contended that eWOM has a significant influence on online purchase intention. Likewise, eWOM is effective not only to innovate new products and services but also to formulate a digital strategy for influencing customers' online purchase intention. (Armawan et al., 2023; Daowd et al., 2021; Nuseir, 2019; Sulthana & Vasantha, 2019; Roy et al., 2018; Zhang et al., 2013; Cheung & Thadani, 2012; Yoo & Gretzel, 2008; Goldsmith & Horowitz, 2006). Therefore, the following hypothesis is suggested:

H1: eWOM has a positive effect on online purchase intention.

WEBSITE QUALITY

Website quality is a multi-faceted concept to measure the customers' perceptions of transactions from pre-purchase to post-purchase (Chang & Chen, 2009). Rahman & Hossain (2022) mentioned that the dependency on shopping behavior based on website quality is a mysterious matter yet. In the era of e-commerce, online shopping is increasing rapidly. For this purpose, website quality got a lot of attention and care from academicians and experts (Ongshakul et al., 2020). Most of the time customers' shopping intention is impacted by the website quality (Hossain et al., 2021). When the website is arranged full of excellence then it is beneficial to deliver the planned message to the consumer (Li et al., 2017). Loiacono et al.(2002) introduced Web Qual TM which categorized website quality into four aspects like ease of use, usefulness, entertainment, and complimentary relationship based on online users' interviews. Rayport & Jaworski (2003) chimed that effective website design is built with seven components: context, content, communication, customization, connection with other sites, and commerce. Akram et al. (2018) found that the use of credit cards (UCC) will help to develop the website quality as well as impact online impulsive buying behavior (OIBC). Effective website design is the main driver to bring success in the competitive e-commerce time (Pradhan et al., 2018). Website designing and quality help to cover the information about the product and services that's why online shoppers tend to have the product or services from their feelings rather than facts (Brazil et al., 2022). Qalati et al.(2021) showed that website quality positively influences customers' online purchase intention mediated via trust. Likewise, Dogra & Kaushal (2023) affirmed that website quality has a substantial influence on customers' buying intention towards online shopping websites. Consequently, the following hypothesis is recommended:

H2: Website Quality has a positive effect on online purchase intention.

PROMOTIONAL ACTIVITIES

Promotional activities mean coupons, free delivery, discounts, price promotion, a contest based on seasons, special days, and introducing new products and services (Karim et al., 2021). Blattberge & Neslin (1990) explained that promotional activities are directly linked to customers' shopping behavior which is mainly an action focus promotion occasion. Totten & Block (1994) have defined promotion as numerous types of incentives and selling activities to earn urgent sales effects. Sales promotion is the strength to catch the target customer. Sales promotion helps to do shopping at a lower price than the actual price. Promotional activities resist customers to switch brands (Memon et al., 2019; Apriliano, 2018). Chen, & Li (2020) indicated that product promotion creates a festive atmosphere in online shopping. E-commerce sites i.e., Alibaba, Daraz arrange promotions, discounts, and festivals on special days promotion, Daraz's 11.11 campaign, and so on. Kotler & Keller's (2006) Stimuli Response model is considered to bring out the consumer response stimuli to online shopping promotion festive. Andreeva et al. (2010) stated that repeated customer shows a strong desire for price promotion rather than the occasional customer in online shopping. Similarly, Fachmi et al. (2019) found that promotion has a positive effect on online shopping intention. Accordingly, the following hypothesis is assumed:

H3: Promotional Activities have a positive effect on online purchase intention.

TRUST

Trust in online purchasing is the consumer's readiness to be exposed to the acts of an online merchant and will behave in particular agreeable ways, regardless of the consumer's ability to monitor and control the online merchant (Mayer et al.,1995). The acknowledgment of trust as a critical enabler of online business is gaining wider recognition in both academic and professional domains (Rahman et al., 2020; Ventre & Kolbe, 2020; Ling et al., 2010; Huang et al., 2003; Bhattacherjee, 2002; Davis et al., 1999; Hoffman et al., 1999; Mishra, 1996). Customer trust has a critical role in the success of online marketplace transactions. Firstly, online business often involves the exchange of sensitive individual, business, and commercial information between transactions (Lee & Turban, 2001). Secondly, in the online marketspace, customers often engage in transactions with merchants whom they have not previously interacted with or have had minimal contact with. (Pavlou & Gefen, 2004). Conversely, sellers in the virtual marketplace are internet vendors who bear the primary responsibility for on-time service delivery. Market makers, on the other hand, not only offer a platform for interactions but also establish official regulations to systematize and legitimize transactions that occur within their platforms (Lee & Clark, 1997). While trust in the seller remains an essential concern, the presence of a third party, namely the market maker, also plays a role in fostering trust within the e-marketplace (Zucker, 1986; Shapiro, 1987). Higher levels of trust and cooperation are indicators of a successful commercial relationship (Ling et al., 2011; Nakayama, 2000). When using a market maker's online services to transact with unidentified vendors, buyers frequently feel uncomfortable. This may influence whether or not they purchase in the online market. In this sense, a market-maker must pledge to consistently build and preserve client trust (Munikrishnan et al., 2023). In addition to facilitating successful transactions, individuals should also evaluate the vendor's credibility to some degree. Building trust is critical to achieving success in the realm of online business (Kim & Ahn, 2007). Bylok (2022) argued that trust positively impacts e-commerce purchase intentions. Based on the above discussion, the following hypothesis is anticipated:

H4: Trust has a positive effect on online purchase intention.

SECURITY

E-commerce sites arrange their services with products, quality, deals, payment options, product delivery, and other features that affect buying decisions, yet there is a security concern that hinders customers from completing online purchases. (Ariffin et al., 2018). As online shopping increases, the security of financial information, credit card numbers, PINs, and personal information is becoming an even bigger issue in terms of cybercrime, hacking, and transactional fraud (Azizi & Javidani 2010). In recent times, online shopping has become the most convenient way to purchase items; however, according to Tsai & Yeh (2010), Karnik (2014), and Meskaran et al. (2013), inadequate security systems and the lack of security measures can discourage people from making purchases online rather than encouraging them. Alsoud & Mustafa (2020) demonstrated that having protective measures in place for consumers' information when buying encourages them to continue shopping online. Jibril et al. (2020) revealed that concerns about financial loss, damage to reputation, the importance of privacy, or online security have an impact on the desire to shop online. Therefore, security is a critical factor in safeguarding identity, particularly in developing countries, due to the prevalence of online identity theft (Haddad & Binder 2019). Security has a significant impact on the dependability of services provided on websites (Gefen, 2000). Likewise, Tran & Nguyen (2022) also mentioned that security is a foremost factor similar to an individual's reputation, cognitive trust, perceived risk, consumer behavior, and other supreme factors to promote the intention to online shopping. Hence, the following hypothesis is recommended:

H5: Security has a positive effect on online purchase intention.

CONCEPTUAL FRAMEWORK

The conceptual framework has been derived from the literature review described above.

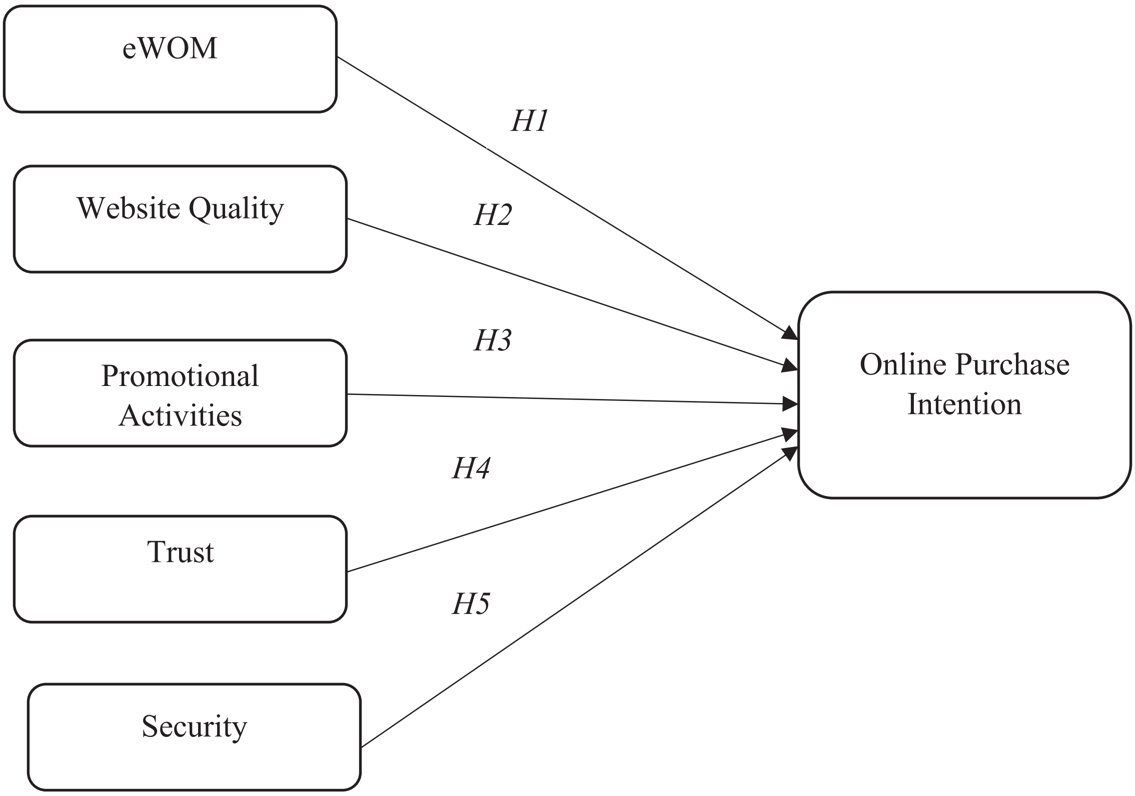

FIGURE 1. CONCEPTUAL FRAMEWORK

METHODOLOGY

SAMPLING AND DATA COLLECTION

This study adopted a quantitative approach to explore the factors influencing customers' online purchasing intentions in Bangladesh. Data was collected through a self-administered questionnaire administered both online and offline. Convenience sampling was chosen for its non-probability sampling technique and ease of access. The online survey was shared on social media platforms such as Facebook, while the offline survey questionnaires were distributed among students and teachers at public, private, and national universities in Bangladesh whose age was 18 and above. The data collection period was one month, from January 5, 2023, to February 5, 2023, during working hours (9 AM to 5 PM). Out of the 315 responses, 260 were valid responses. Hence, the response rate of 82.54%.

MEASURES

This study used several validated measurement scales adapted from the earlier literature.eWOM was adopted from Molinari et al. (2008), encompassing three (3) items. The scale to measure Website Quality was adopted from (Sicilia et al., 2005; Novak et al., 2000; Chen et al., 1999), including three (3) items. Promotional Activities were measured by a four-item scale adopted from Bakewell & Mitchel (2003), comprising four (4) items. Trust was assessed using a scale adapted from Mukherjee & Nath (2007); Wong & Sohal (2006), encompassing four (4) items. Security was measured using a scale adapted from Park & Kim (2003) and Liu et al. (2008) including four (4) items. Finally, online purchase intention was measured by a three-item scale adopted from Pavlou & Fygenson (2006). All variables were measured using a 5-point Likert scale ranging from 1= Strongly Disagree, to 5=Strongly Agree. In addition, demographic information of the respondents regarding gender, age, income, and education level.

DATA ANALYSIS AND RESULTS

RESPONDENTS' DEMOGRAPHIC INFORMATION

Table 1 depicts the demographic profile of the respondents. These results revealed that male respondents accounted for 50.4% and female respondents made up 49.6%. The majority of the respondents were aged 18-30 (91.9 %), and the least was over 40 (1.5 %). Most of the respondents had a monthly income of 500-20,000 taka (79.6 %), and the majority were undergraduates (74.6 %).

TABLE 1 SUMMARY OF RESPONDENTS 'DEMOGRAPHIC PROFILES (N=260)

Variable	Category	Frequency	Percentage
Gender	Male	131	50.4 %
	Female	129	49.6 %
Age	18-30	239	91.9 %
	31-40	17	6.5 %
	Above than 40	4	1.5 %
Income (Monthly)	500-20,000 Taka	207	79.6 %
	21,000-40,000 Taka	28	10.8 %
	41,000-60,000 Taka	8	3.1 %
	Above than 60,000 Taka	17	6.5 %
Education level	Undergraduate	194	74.6 %
	Graduate	36	13.8 %
	Post Graduate	25	9.6 %
	Others	5	1.9 %

Source: Primary data was collected through a questionnaire and calculated in SPSS 23.0

RELIABILITY TEST

To determine the scale's reliability and internal consistency of their statements, Cronbach's Alpha was calculated. In this study, Cronbach's Alpha values were ranging from 0.734 to 0.872 which is greater than the suggested cut-off value of 0.70 (Nunnally, 1978) (See Table 2).

TABLE 2. RESULTS OF RELIABILITY

Factors	No. of Items	Statement	Cronbach's Alpha	Source
eWOM	3	eWOM1: I say a positive thing about websites to other people. eWOM2: I recommend websites to anyone who seeks my advice. eWOM3: I say a positive thing about the products of the websites.	0.734	Molinari et al., (2008)
Website Quality	3	WB1: Websites are user-friendly. WB2: Websites provide me with valuable content. WB3: Websites have a search tool that enables them to locate the products.	0.771	Sicilia et al., 2005; Novak et al., 2000; Chen et al., 1999;
Promotional Activities	4	PA1: Price discount helps to increase online selling. PA2: Sales promotion creates purchase intention online. PA3: By using the "Buy one get one" technique the customer can easily attract to buy the product. PAS4: I feel like buying a product when my social surroundings influence me to buy products online.	0.809	Bakewell & Mitchel (2003)
Trust	4	T1: I trust the information that the site provides. T2: I trust the promise that the site makes. T3: I trust the products that the site provides. T4: I trust the delivery of products that the site makes.	0.864	Mukherjee & Nath (2007); Wong & Sohal (2006).
Security	4	S1: I feel safe in my transactions with the website. S2: I feel like my privacy is protected at the site. S3: I trust the site will not misuse my personal information. S4: I trust the site will not give my information to other sites without my permission.	0.872	Park & Kim (2003); Liu et al. (2008).
Online Purchase Intention	3	INT1: If the opportunity arises, I intend to buy from online stores. INT2: If given the chance, I can predict what I should buy from an online store in the future. INT3: I am likely to transact with an online store soon.	0.801	Pavlou & Fygenson (2006)

MULTIPLE REGRESSION ANALYSIS

Table 3 demonstrated that the R square for this regression model was 0.580, which indicated 58% of the variance in online purchase intention is explained by eWOM, Website Quality, Promotional Activities, Trust, and Security. The rest of the 42 % purchase intention can be explained by other predictors which are not measured in this research. Table 4 displayed ANOVA test results which illustrate that F= 70.202, P= .000< .05. This indicates that the model is statistically significant in that the predictors of the model significantly impact the dependent variable of online purchase intention.

TABLE 3: MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762[a]	.580	.572	.46399

a. Predictors: (Constant), eWOM, Website Quality, Promotional Activities, Trust, Security

TABLE 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.567	5	15.113	70.202	.000[b]
	Residual	54.682	254	.215		
	Total	130.250	259			

a. Dependent Variable: Online Purchase Intention

b. Predictors: (Constant), eWOM, Website Quality, Promotional Activities, Trust, Security

HYPOTHESIS TESTING

Table 5 displays the results of the multiple regression analysis, which indicates that eWOM (β = 0.210, $p < 0.05$), Website Quality (β = 0.207, $p < 0.05$), Promotional Activities (β = 0.151, $p < 0.05$), and Trust (β = 0.339, $p < 0.001$) had a significant positive impact on consumer online purchase intention. Although the effect of Security on online purchase intention was positive but nonsignificant (β = 0.047, $p > 0.05$). Among the predictors, the standardized regression coefficients demonstrated that Trust (β = 0.339) exerted the strongest effect on online purchase intention, followed by eWOM (β =0.210), Website Quality (β =0.207), and Promotional Activities (β =0.151) respectively.

TABLE 5: RESULT OF THE HYPOTHESIS TESTING

	Unstandardized Coefficients		Standardized Coefficients		
Hypothesized paths	B	Std. Error	Beta	**t**	**Sig.**
(Constant)	.344	.173		1.985	.048
H1: eWOM → Online Purchase Intention	.209	.056	.210	3.747	.003
H2:Website Quality → Online Purchase Intention	.199	.055	.207	3.638	.000
H3: Promotional Activities → Online Purchase Intention	.123	.040	.151	3.037	.000
H4: Trust → Online Purchase Intention	.338	.057	.339	5.897	.000
H5: Security → Online Purchase Intention	.045	.052	.047	.865	.388

a. Dependent Variable: Online Purchase Intention

DISCUSSION AND MANAGERIAL IMPLICATIONS

The purpose of this study is to measure the factors affecting customers’ online purchase intention in the context of Bangladesh. Online shopping is now a regular activity in a day. Bangladesh’s university students and teachers are also involving them in online purchases to save time, energy, and effort. As online shopping is now very easy to conduct and user-friendly technology is playing a vital role in Bangladesh’s university students and teachers. Results exposed that eWOM has a significant impact on online purchase intention which is consistent with prior studies (Kautish, et al., 2023; Bilal et al., 2022; Kurniawan et al., 2022; Bilal et al., 2021; Tandon et al., 2020; Khwaja, 2020). Therefore, online marketers should take into account the ratings, past experiences, and product evaluations of others by including hyperlinks on their websites that provide access to eWOM information. They can also organize online contests in which participants who share their content can receive attractive prizes. This approach offers them an opportunity to reach a large number of consumers and obtain rapid feedback. Results also affirmed that Website Quality has a positive and substantial effect on online purchase intention which is congruent with earlier findings (Qalati et al., 202; Kouser et al., 2018; Lee et al., 2016). The study suggests that websites that focus on user-friendliness, attractive design, real-time services, and valuable content about their products and services can increase online purchase intention by reducing ambiguity. Furthermore, promotional activities were also found significant for online purchase intention which is in line with Tarigan et al. (2020) and Hardini et al. (2020). The findings suggest that online marketers should consider implementing large-scale online promotions such as discounts, referral rewards, loyalty gifts, and buy one get one free to boost individual purchase intention for their products or services. The research findings indicate that trust is the most critical factor influencing online purchase intention consistent with the prior studies (Jadil et al., 2022; McLean et al., 2020). The findings imply that consumers view online shopping as being a lower risk when they trust the merchant’s website and that perceived risk reduces as consumer perception of trust rises. Therefore, online marketers should disseminate trustworthy digital content about their goods and services and keep their word after delivering on their promises. In addition, security was found insignificant for online purchase intention consistent with Irawan, (2018). This may be because Bangladeshi customers are not well informed about their privacy and security issues related to online purchases.

CONCLUSION AND FUTURE RESEARCH DIRECTION

The aim of this research is to examine the factors that impact customers' online purchase intention from a Bangladeshi perspective. The study involved surveying university students and teachers in Dhaka city, with a sample size of 260 participants. The results indicate that eWOM, website quality, promotional activities, and trust all have a positive and significant impact on online purchase intention, except for security. Among these factors, trust emerged as the most crucial factor shaping online purchase intention. These findings can assist online marketers in developing customer-focused marketing strategies that add value and attract more customers, thereby improving the company's profitability. Future research should add more factors along with our proposed model i.e., brand image, brand awareness, and brand experience to make a robust framework for measuring online purchase intention.

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Factors predicting consumers' adoption of chatbots within the banking industry in South Africa

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ABSTRACT

Purpose: The aim of this study is to investigate the factors that make chatbots likely to be used in South African banking.

Design/methodology/approach: An online survey was used to obtain the primary data. The target population consisted of consumers who have a bank account and have experience with online banking in South Africa. A convenience and snowball sampling were used to recruit the required respondents. A total of 151 usable questionnaires were analysed using a quantitative approach and a structured questionnaire.

Findings: The empirical results show that perceived compatibility, perceived social influence, and perceived ease of use are predictors of chatbot adoption in the South African banking industry.

Research limitations/implications: Even though the study yielded significant findings, the small sample size of 151 respondents made it impossible to generalize the results. The survey was only available online, which could be a problem for people who do not know how to fill out surveys online.

Practical implications: The findings provide key stakeholders in the marketing and communications departments of the banking industry with in-depth knowledge of factors predicting the adoption of chatbots.

Social implications: The findings and implementation of the recommendations would enhance consumers' banking experiences.

Originality/value: Previous research in chatbots has not focused much on the banking industry in South Africa. In addition, there has been limited research with regards to AI use in the banking industry in Africa as well as in South Africa. This study helped to close these gaps. Theoretically, the findings contribute to the body of knowledge on digital marketing and thus assist the banking industry to enhance its online engagement using chatbots with the consumer.

Keywords: Perceived compatibility, social influence, perceived ease of use, chatbot adoption, banking industry, South Africa

INTRODUCTION

The marketing environment has experienced major transformation in the era of artificial intelligence (AI) particularly in the use of digital technology for marketing and advertising (Sima, Gheorghe, Subić & Nancu, 2020). South African banks are consistently exploring how they can use AI-powered chatbots to offer financial advice and help to customers. Furthermore, the banking sector in South Africa has undergone tremendous changes from providing paper-based banking services to adapting to modern digital technologies in the form of e-banking (Venter de Villiers et al 2020). Utilisation of technology that aims at offering meaningful experiences for the consumer and moving from in branch money transactions to online platforms has been the core of digital banking (Rahi, Ghani & Ngah, 2019). The use of artificial intelligence, the internet of things, and smart phones has largely caused a high demand for customer online interactions, especially within the banking sector (Rahi et al., 2019). The recent COVID-19 pandemic also made it clear how important it is to switch from traditional banking to digital banking.

The implementation of digital banking has been received with mixed reactions, with some consumers criticising or being reluctant to adapt to the changing ways of concluding transactions (Alalwan, Dwivedi, Rana & Algharabat, 2018). In the South African banking industry, chatbots are increasingly being adopted as a marketing tool (Eren, 2021). Chatbots can help customers make informed decisions based on their needs and preferences. For example, the Standard Bank of South Africa has implemented a chatbot, known as “AskSabi,” to assist customers with their banking activities, while First National Bank (FNB) has developed a chatbot called “AskFNB,” which can assist customers with various banking transactions, such as checking account balances and making payments.

The use of digital innovations by consumers (e.g., chatbots in the banking sector) is constantly changing because of changing consumer preferences and past experiences (Trustradius, 2020). Even though chatbots are characterised by several advantages for both the organisation and the consumer, it has been reported that the adoption rate has been very slow (Alalwan et al., 2018; Expert.ai Team 2020). Studies have reported that the adoption of chatbots in the banking sector has been impeded due to the perceived level of effectiveness, acceptance, and frequency of use of the application system (Khan, 2019; Rahi et al., 2019).

Besides the above challenges, most of the studies (Skafi, Yunis & Zekri 2020; Yin, Goh, Yang & Xiaobin 2021) on chatbots have been in the field of computer science rather than digital marketing (Eren, 2021; Rahi et al., 2019). The literature reviewed further shows a focus on chatbot implementation from a managerial perspective rather than consumer adoption, and a look at the South African banking industry context shows limited research focusing on digital marketing activities (Castri 2018 cited in Bhatti, 2019). Therefore, against this backdrop, results from previous studies such as that of Skafi et al (2020) and Yin et al. (2021) cannot be holistically transferable particularly to the South African digital marketing and the financial sector. Drawing from this background and gaps identified, it is imperative to identify the factors that predicts consumer adoption of chatbot within the banking industry in South Africa. Thus, the research question for this study is: “what are the factors that are predictors of chatbot adoption by consumers within the banking industry in South Africa?” The main objective of this study is to identify the predictors of chatbot adoption by consumers in the banking sector.

LITERATURE REVIEW

This section will present the literature on the use of chatbots within the South African banking industry. This will be followed by the main theoretical concepts underpinning this study.

THE USE OF CHATBOT IN THE SOUTH AFRICAN BANKING INDUSTRY

The banking industry in South Africa is composed of 36 licensed banks (Businesstech, 2020; Moyo, 2018). The size of banks in South Africa is normally determined by their assets, the services they offer, and their target market (Kapingura, 2013). However, one of the key challenges that the banking industry in South Africa is facing is the fast-paced digital technology evolution, which is affecting the industry as well as consumer engagement (PWC, 2021). The industry has embraced digital banking platforms, mobile banking applications, internet banking, and digital wallets to actively promote the use of digital banking (Fotso, 2020).

Chatbots have become a popular way in which the banking industry engages with its consumers. A chatbot is an artificial intelligence (AI) supported service tool that communicates with users over messaging apps, websites, mobile apps, or over the phone and analyses text from a consumer and links it to a database that contains possible answers (Baris, 2020; Crutzen, Peters, Portugal & Fisser, 2011). Chatbot permits immediate responses to questions posed by consumers without having to wait for a customer service representative to be available. Thus, a chatbot offers 24-hour omnipresent personal assistance aimed at solving consumer queries such as balance checks, sending money, and hyper-target marketing (Kaczorowska-Spychalska, 2019; Lubbe & Ngoma, 2021). Banks are now using AI-powered online chatbots to answer customer queries and process transactions to fit into the lifestyles of consumers without interrupting their convenience and comfort (Dapp, 2014; Mishra & Singh, 2015).

THEORETICAL PERSPECTIVE

The Technology Acceptance Model (TAM), the Diffusion of Innovation Theory (DoIT), and the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) formed the theoretical foundation of the study. The integration of these models in this study provides a comprehensive framework that will help to investigate the main predictors of consumer adoption of chatbots in the banking industry.

Davis (1989) proposed the Technology Acceptance Model (TAM), which consists of two components: perceived usefulness (PU) and perceived ease of use (PEOU). TAM is a renowned model used to judge the acceptance, use, and adoption of information technology (Goh & Wen, 2021; King & He, 2006). The model has been easily applied and validated in a wide range of new technologies and information systems, such as the adoption of electronic commerce (Pavlou, 2003), e-health systems (Wilson & Lankton, 2004), and mobile-based technologies (Almaiah et al., 2022; To & Trinh, 2021). For example, Almaiah et al, (2022) applied the TAM to investigate the most relevant factors that influence mobile learning readiness. Their study established that there is a positive and significant relationship between mobile learning readiness and awareness, IT infrastructure and top management support.

The DoIT, on the other hand, is a social and psychological theory aimed at assisting in the prediction of how people make decisions to adopt an innovation through investigating their adoption patterns and understanding its structure Rogers & Shoemaker (1983 cited in Min, So & Jeong, 2019). Innovation reflects an idea, object, or practice that is perceived by an individual, while diffusion is the process by which such innovation is communicated (Ali, Raza, Puah & Amin, 2019; Rogers, 2003). Skafi, Yunis, and Zekri, (2020) used the DoIT model in determining the factors influencing SMEs' adoption of cloud computing services in Lebanon. The results indicate that technological (complexity and security) and organisational (top management support and prior IT experience) factors are the main variables positively related to the decision to adopt cloud computing services (Skafi et al., 2020). DoIT is praised for its capacity to explain an innovation and its adoption or diffusion rate (Min et al., 2019).

Venkatesh et al. (2012) proposed the UTAUT2, which focuses on performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit as the key attributes impacting the behavioural intention of customers to accept and use technology (Sugumar & Chandra, 2021; Venkatesh et al., 2012). In an investigation of users' intentions to use m-wallets in Malaysia, Tang et al. (2014) employed the UTAUT2 model. The results from the study disclosed that performance expectancy, effort expectancy, hedonic motivation, facilitating conditions, and habit have significant impacts on behavioural intention to use such a payment method (Rabaa'I, 2021). In the South African context, by extending the model to predict the acceptance levels of the people-to-people (P2P) services of the WeChat wallet in South Africa, the results showed that trust, security, and privacy together with TAM constructs are noteworthy in deducing the behaviour of South Africans to adopt the WeChat wallet (Rabaa'I, 2021).

PROPOSED INDEPENDENT VARIABLES FOR THE CURRENT STUDY

Considering the constructs in the TAM, DoIT, and UTAUT2 models, the following independent variables were proposed for the study.

Facilitating conditions

Facilitating conditions reflect the consumer's knowledge, ability, and resources available to use a chatbot online (Venkatesh et al., 2012). The absence of such facilitating conditions is likely to have a negative impact on technology usage and behavioural intentions (Al-Adwan et al., 2018). Based on a study by Toh and Tay (2022), facilitating conditions have been identified as one of the significant factors in explaining the acceptance of banking chatbots. Therefore, it is hypothesised that:

H1: **Facilitation conditions significantly predict consumer adoption of chatbots in the South African banking industry.**

Relative advantage

An innovation is likely to be adopted if it is perceived to offer more benefits than its predecessor (Ali et al., 2019; Al-Jabri & Sohail, 2012). Thus, relative advantage results in increased efficiency, economic benefits, and enhanced status associated with adopting an innovation (Al-Rahmi et al., 2021). Frambach and Schillewaert (2002); Sallehudin, Razak & Ismail, (2015); Al Ajam (2013) found significant correlations between relative advantage and adoption in their studies. Thus, it is hypothesised that:

H2: **Relative advantage significantly predicts consumer adoption of chatbots in the South African banking industry.**

Price value

Price value is the cost benefit attained for using an innovation such as chatbots (Dhiman et al 2019). The greater the price value, the higher would be the motivation to adopt the new technology (Dhiman et al., 2019). In other research studies such as on music streaming services (Helkkula, 2016), mobile learning adoption (Yang, 2013), TV streaming (Indrawati & Haryoto, 2015), instant messenger application (Indrawati & Marhaen, 2015), mobile banking (Mahfuz et al., 2016), it was confirmed that price value is a strong determinant of a consumer's behavioural intention. Based on previous research findings, it is hypothesised that:

H3: **Price value significantly predicts consumer adoption of chatbot in the South African banking industry.**

Hedonic motivation (HM)

Hedonic motivation (HM) is the joy, fun, playfulness, and entertainment of using a technology (Rabaa'I, 2021; Venkatesh et al., 2012). Previous research reveals HM to have a crucial role in accelerating users' intention to accept and adopt emerging systems in technology literature (Alalwan, Dwivedi & Rana, 2017; Rabaa'I, 2021; Toh & Tay, 2022). It is therefore hypothesised that:

H4: **Hedonic motivation significantly predicts consumer adoption of chatbots in the South African banking industry.**

Perceived Compatibility

Perceived compatibility is when an innovation fits into consumer banking needs, behaviour, values, experience, and practice (Al-Rahmi et al., 2021). In other words, compatibility occurs when the technology fits into consumer lifestyle. Kim and Galliers (2004) found that compatibility is positively related to an innovation's rate of adoption (Sanni et al 2013). Compatibility is a significant antecedent in determining consumers' attitude towards technology adoption in internet banking (Ndubisi & Sinti, 2006). Based on the preceding discussions, it is hypothesised that:

H5: Perceived compatibility significantly predicts consumer adoption of chatbots in the South African banking industry.

Social influence

Social influence is the extent to which a consumer feels it important to consider the input of significant others when deciding whether they should use the new system (Barre et al., 2021; Venkatesh et al., 2003). Moreover, information and reassurance given to the consumer by these people may play a key role in increasing consumer awareness of the technological processes (Alalwan, Dwivedi, Ran & Williams, 2016; Sugumar & Chandra, 2021). Social influence has emerged as a critical variable in the adoption and use of technological innovation such as online gaming, mobile applications, mobile payments, and service delivery (Barre et al., 2021; Sugumar & Chandra, 2021; Gursoy, Chi, Lu & Nunkoo, 2019). Therefore, it is hypothesised that:

H6: Social influence significantly predicts consumer adoption of chatbots in the South African banking industry.

Perceived ease of use

Perceived ease of use is when consumers feel like using self-service technology is easy and does not give them many problems (Davis, 1989). Lee, Hsieh and Hsu (2011) in their study on e-learning, observed a positive correlation between complexity and the perceived usefulness of e-learning. Previous studies have argued that when an innovation is perceived to be highly complex, users perceive it to be highly useful, even though they experience a certain degree of difficulty in using it (Al-Rahmi et al., 2021; Sanni et al., 2013). Therefore, it is hypothesised that:

H7: Perceived ease of use significantly predicts consumer adoption of chatbots in the South African banking industry.

Perceived usefulness

Davis (1989) describes perceived usefulness as the degree to which an individual trusts that using a particular device or system will improve his or her job performance (Pikkarainen et al., 2004). Past studies indicate that perceived usefulness is the strongest cognitive determinant of technology acceptance, as customers usually attach greater importance to whether they will benefit from using an innovation (Lubbe & Ngoma, 2021; Al-Emran, Arpaci & Salloum, 2020; Alshurideh, Al Kurdi, Salloum, Arpaci & Al-Emran, 2020). Therefore, it is hypothesised that:

H8: Perceived usefulness significantly predicts consumer adoption of chatbots in the South African banking industry.

DEPENDENT VARIABLE – CONSUMER ADOPTION OF CHATBOT

Consumer adoption of chatbot constitutes the dependent variable of the study. Technology adoption is a multi-phase process that starts with conceiving the idea to adopt an innovation (selecting, purchasing, or committing to use it) and then achieving regular use of a brand or a service (Nadal, Doherty & Sas, 2019). Rogers (2003) and Faisal and Idris (2020) argue that the social compact within which an individual exists and interacts in a community could motivate an individual to use a new technology. The social influence may involve the opinions of influential people in the society. Positive attitudes towards an innovation may influence its adoption by other consumers and the persistent use of such a technology.

RESEARCH METHODOLOGY

The study adopted the quantitative research method, which helped in applying statistical methods to test hypotheses in the study (Saunders, Lewis & Thornhill, 2012). The population for this research involved consumers of the banking industry's products and services in South Africa. The target respondents consisted of consumers who have used or experienced online banking activities in South Africa. Respondents were chosen from private and commercial banks. The exact population and sampling frame of consumers with knowledge of chatbots or who had used chatbots to access banking services in South Africa were unknown. However, based on the minimum sample size recommended by Survicate (2022), Hair et al. (2017), and Roscoe (1975), Javadi, Dolatabadi, Nourbakhsh, Poursaeedi and Asadollahi (2012), Chin and Newsted (1999 cited in Hur, Ahn, & Kim), a sample size of 200 respondents was chosen for this study. The respondents had to be 18 years of age or older and have an account with any of the South African registered banks. In addition, the respondents had to be consumers who had experienced online banking.

An online structured questionnaire was distributed through QuestionPro to collect the primary data. Convenience and snowball sampling method was used to recruit the target respondents. The link was shared through the researchers' email contacts and social media platforms with potential respondents. Only respondents who are available and had given consent to participate in the study were allowed to complete the questionnaire. The respondents were also encouraged to send the link to the survey to other potential respondents. Closed-ended questions and five-point Likert scales were used. Having standard questions promotes quicker interviews and makes analysis easier (Sommer & Gamper, 2021). All the questions were adapted from already validated measuring instruments in the literature or self-developed by the researcher (Al-Rahmi et al., 2021; Faisal & Idris 2020; Rabaa'i 2021; Venkatesh et al. 2012). The face validity of the measuring instrument was ensured by involving two subject experts in digital marketing and artificial intelligence in the design of the questionnaire. The gathered data was coded and captured on a Microsoft Excel spreadsheet. Thereafter, IBM SPSS version 16 was used to analyse the data. The data analysis includes descriptive and inferential statistical calculations.

The researcher obtained ethical clearance from the University Faculty Ethics Research Committee. The ethics clearance number for this study is H22-BES-MRK-097. The recruitment of respondents was voluntary, and respondents were assured of the confidentiality of information. Potential respondents were able to withdraw from participation if they felt uncomfortable. All participants indicated their consent to participate before being allowed to complete the questionnaire.

FINDINGS

A total of 352 questionnaires were received, of which 151 were usable and used in the data analysis. When compared with the proposed sample size of the study, this represents a response rate of 75.5%. Table 1 represents the profile of the sample. It emerged that slightly more than half of the respondents (56%) were female. Respondents between 36 and 45 years of age were mostly represented in the survey (42%). The sample is made up of predominantly (59%) full-time employed individuals, which could be a contributing factor to their having bank accounts. 33% of the respondents possess a postgraduate degree, followed by those who have a degree (30%) or diploma (25%). Only 1% of the respondents have a qualification below the matriculation certificate.

TABLE 1: PROFILE OF THE SAMPLE

Category	**Frequency**	**Percentage (%)**
Gender of respondents		
Male	60	40
Female	85	56
Other	6	4
Total	151	100
Age grouping		
18-25 years	14	9
26-35 years	43	29
36-45 years	64	42
46-55 years	25	17
56-65 years	5	3
Total	151	100
Employment status		
Full-time employment	89	59
Part-time employment	20	13
Retired	4	3
Student	29	19
Other	9	6
Total	151	100
Education level		
Below Matric level	2	1
Matric level certificate	10	7
Certificate	6	4
Diploma	38	25
Degree	45	30
Postgraduate degree	50	33
Total	151	100

Source: Results from primary data of the study

VALIDITY AND RELIABILITY TESTS

To find out how many factors were in the data set, an exploratory factor analysis was done. Using an eigenvalue greater than 1 and a scree plot, nine factors were identified from the items in the questionnaire. Furthermore, as recommended by Hair et al. (2006), factor loadings greater than or equal to 0.450 guided the study, as they were deemed significant at the =0.05 level for the sample size of 151. Cronbach’s alpha coefficient was established to examine the reliability of the measuring items. According to Shrestha (2021), a Cronbach alpha coefficient value of 0.70 and above is deemed as reliable. The results of the reliability test are reported in Table 2. All the Cronbach alphas are greater than 0.80, which indicates excellent reliability and implies that the items measuring the various factors are reliable.

TABLE 2: CRONBACH'S ALPHA COEFFICIENTS FOR THE FACTORS

Variable	Cronbach's Alpha
Facilitating conditions	0.81
Relative advantage	0.86
Price value	0.86
Hedonic motivation	0.84
Perceived compatibility	0.87
Social influence	0.92
Perceived ease of use	0.88
Perceived usefulness	0.85
Chatbot adoption	0.88

Source: Results from primary data of the study

DESCRIPTIVE STATISTICS OF THE FACTORS

The mean score, standard deviation, minimum, quartile, median, and maximum values of the data are reported in Table 3. The mean score for all the factors ranged from M = 3.34 to M = 4.27. The highest mean score relates to relative advantage, while the lowest mean score is the social influence factor. All the standard deviation values are below SD=2.0, suggesting that they are closely knitted around the mean scores. Hence, there are no concerns about outliers. The minimum value is 1.00, and the maximum value is 5.0.

TABLE 3: CENTRAL TENDENCY AND DISPERSION

Factors	Mean	S.D.	Minimum	Quartile 1	Median	Quartile 3	Maximum
Facilitating conditions	4.07	0.59	1.00	3.71	4.14	4.43	5.00
Relative advantage	4.27	0.57	1.00	4.00	4.25	4.63	5.00
Price value	4.18	0.72	1.00	4.00	4.20	4.60	5.00
Hedonic motivation	3.83	0.74	1.00	3.40	4.00	4.40	5.00
Perceived compatibility	4.16	0.66	1.00	4.00	4.17	4.50	5.00
Social influence	3.34	1.01	1.00	2.67	3.50	4.09	5.00
Perceived ease of use	4.10	0.66	1.25	3.75	4.25	4.50	5.00
Perceived usefulness	4.23	0.60	1.00	4.00	4.29	4.64	5.00
Chatbot adoption	3.92	0.64	1.00	3.67	4.00	4.33	5.00

Source: Results from primary data of the study

RELATIONSHIPS BETWEEN THE FACTORS

The Pearson Product Moment Correlations were used to determine how the variables and chatbot adoption are related to each other. For this analysis, a correlation coefficient (r) is statistically significant if |r| >= 0.160 for n = 151 and practically significant if |r| >= 0.300 for any sample size. It is significant (both statistically and practically) if |r| >=.300 (Gravetter & Wallnau 2009). The results of Pearson's product moment correlations are presented in Table 4 below.

TABLE 4: PEARSON PRODUCT MOMENT CORRELATIONS

Factors	**Perceived usefulness**	**Perceived ease of use**	**Facilitating conditions**	**Price value**	**Hedonic motivation**	**Social influence**	**Perceived compatibility**	**Relative advantage**
Perceived usefulness	-							
Perceived ease of use	.543**	-						
Facilitating conditions	.662**	.652**	-					
Price value	.660**	.589**	.751**	-				
Hedonic motivation	.538**	.502**	.645**	.613**	-			
Social influence	.159	.171*	.300**	.152	.457**	-		
Perceived compatibility	.486**	.470**	.637**	.611**	.595**	.307**	-	
Relative advantage	.471**	.459**	.561**	.606**	.507**	.117	.720**	-
Chatbot adoption	.512**	.507**	.579**	.535**	.566**	.387**	.558**	.481**

Source: Results from primary data of the study

The results indicate that there is a practical and significant relationship between chatbot adoption and all the identified independent factors. The weakest relationship exists between social influence and chatbot adoption (r = 0.387). A moderate correlation but the biggest was established between facilitating conditions and chatbot adoption (r = 0.579). Furthermore, the relationship between social influence and perceived ease of use (r = 0.171) is practical but not statistically significant. Moreover, no practical and statistically significant relationship exists between social influence and the following factors: perceived usefulness (r = 0.159), price value (r = 0.152), and relative advantage (r = 0.117). The strongest correlation was found between price value and facilitating conditions (r = 0.751) and between relative advantage and perceived compatibility (r = 0.720). Although these relationships have been established, the focus of this study is to identify the predictors of chatbot adoption.

STEPWISE MULTIPLE LINEAR REGRESSION (SMLR)

A stepwise multiple linear regression analysis was done to find the factors that predict chatbot use in the banking industry and to test the study's hypotheses. In Table 5, it emerged that perceived compatibility (p = 0.009), social influence (p = 0.017), and perceived ease of use (p = 0.022) are factors that significantly predict the adoption of chatbots.

TABLE 5: SMLR RESULTS (N=151)

Independent variables	Coefficients	Std Err	t(144)	p-value	Hypotheses	Decision
Intercept	0.672	0.302	2.227	0.028**		
Facilitating conditions	0.179	0.110	1.693	0.093	H_1	Not supported
Relative Advantage	0.101	0.046	1.105	0.271	H_2	Not supported
Price Value	0.122	0.060	1.213	0.227	H_3	Not supported
Hedonic Motivation	0.137	0.080	1.765	0.080	H_4	Not supported
Perceived Compatibility	0.214	0.080	2.648	0.009**	H_5	Supported
Social Influence	0.106	0.044	2.424	0.017**	H_6	Supported
Perceived Ease of Use	0.184	0.079	2.320	0.022**	H_7	Supported
Perceived Usefulness	0.159	0.089	1.899	0.060	H_8	Not Supported

Notes:

[a]Dependent variable: Chatbot adoption

[b]Adjusted R^2= .449; F(5;145)=25.451; **p<0.0005; Std.Error of estimate=.4775

DISCUSSIONS, CONCLUSIONS, AND IMPLICATIONS

The goal of this study was to find out what factors make consumers of South African banks more likely to use chatbots. To reach this goal, nine factors (facilitating conditions, relative advantage, price value, hedonic motivation, perceived compatibility, social influence, perceived ease of use, perceived usefulness, and chatbot adoption) were found in the literature and used as the basis for the study. The exploratory factor analysis revealed nine factors, consisting of eight independent factors (facilitating conditions, relative advantage, price value, hedonic motivation, perceived compatibility, social influence, perceived ease of use, and perceived usefulness) and one dependent factor (chatbot adoption). The results revealed that perceived compatibility (p = 0.009) is a significant predictor of chatbot adoption. The mean score for perceived compatibility is 4.16. The results further indicate that there is a statistically and practically significant relationship between perceived compatibility and chatbot adoption. The findings imply that if a chatbot is compatible with all aspects of a consumer's lifestyle, customer service queries are handled urgently, and it fits well with consumer banking needs, then it is likely that consumers will adopt chatbot use. Therefore, the more compatible or well-matched an innovation is with a consumer's knowledge, the higher the chatbot adoption rate. Consequently, perceived compatibility is an important factor for consumers when making decisions about chatbot adoption. The results of the current study are consistent with prior studies that found that perceived compatibility motivates consumers' attitudes towards the adoption of new technology (Kim & Galliers, 2004; Sanni et al., 2013; Ndubisi & Sinti, 2006). The results suggest that it is important to develop and implement banking chatbots in a way that is compatible with the lifestyle and values of the bank's customers. Therefore, the hypothesis (H5) formulated for the study is supported.

Based on the correlation analysis, there is a link between social influence and the use of chatbots. The significant relationship is, however, weak. The mean score of M=3.34 was recorded for the social influence factor. Based on the results in Table 5, social influence (p = 0.017) was identified as a factor that significantly predicts chatbot adoption in the South African banking industry. This implies that even though the variable is significant, consumers consider it very important in their behaviour towards chatbot adoption. Considering chatbot adoption in the banking industry, consumers are likely to perceive the recommendation by influential people as their priority to adopt chatbots. In prior studies, the social influence has proved to be important in explaining the usage of technological innovation (Barre et al., 2021; Sugumar & Chandra, 2021; Gursoy, Chi, Lu & Nunkoo, 2019). Thus, hypothesis (H6) formulated for the study is supported.

Perceived ease of use was also identified as a factor that predicts chatbot adoption in the banking industry (p = 0.022). Perceived ease of use attracted a mean score of 4.10 and revealed that there is a significant correlation with the adoption of chatbots within the banking industry. The variable is influenced by factors such as improved transacting online, which is easy to navigate, reduces human error, and offers a mentally and physically effortless experience. In accessing banking services, consumers' main concern is having their needs met in an easy way. Hence, in designing a chatbot, banks should prioritize the ease of using the application. The findings are consistent with previous research, which found that consumers would adopt an innovation based on its perceived ease of use (Al-Rahmi et al., 2021; Sanni et al., 2013; Lee, et al., 2011). Therefore, hypothesis (H7) is supported.

The study's results showed that even though factors such as facilitating conditions, relative advantage, price value, hedonic motivation, and perceived usefulness were linked to chatbot adoption, they did not predict chatbot adoption in the banking industry. Thus, the following hypotheses (H1, H2, H3, H4, and H8) are not supported.

RECOMMENDATIONS, LIMITATIONS, AND FUTURE RESEARCH AREAS

The main goal of this study was to investigate what makes South African banking customers more likely to use chatbots. The empirical results showed that perceived compatibility, perceived social influence, and perceived ease of use are all strong predictors of chatbot adoption by South African banking customers. Based on the findings, the following recommendations are made: banks should strive to ensure that their chatbot technology and applications are compatible with all smart devices and gadget types and not limited to just a few. Banks should develop chatbot innovations and applications that are compatible with the lifestyles of consumers in South Africa.

This study established that consumers' decisions to adopt chatbots for accessing banking services are predicted by how easy the system is to use and does not require too much effort to learn and use. It is recommended that banks design chatbot applications that are not complicated to use. The marketing department of the banks should create a chatbot awareness campaign to expose and educate potential consumers on the benefits of and how to use chatbots. The marketing department in the banking sector in South Africa should also develop a unique marketing concept that could be used to convince consumers to adopt chatbots. Banks should also make use of social influences, particularly those of ordinary citizens, to convince consumers to adopt chatbots. This might enhance the social influence within the society.

This study contributes to the literature on consumer adoption of chatbots in the banking industry in South Africa. The study also identified the factors that industry practitioners within the banking industry could priotise to enhance the use of Chatbots and remain sustainable in future disruptions. However, the following limitations should not be overlooked. Firstly, only 151 usable responses were used in the data analysis. In addition, the survey was conducted online, which was a disadvantage to those who were not well versed in how to navigate an online survey. The study also did not narrow down to a particular banking chatbot system but examined chatbots in the banking industry in general; therefore, future research can consider a particular chatbot application. In the future, the study's identified factors can be replicated in a different geographic location (country). A conscious effort should be made in the future to increase the sample size in an effort to generalize the findings.

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Critical retail service factors in literature: a review and meta-analysis approach

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ABSTRACT

Purpose: The assessment and observation of critical service factors within the retail industry have garnered increased importance in recent times, due to their perceived ability to shape superior future strategies. The aim of this study is to investigate the service elements that are deemed essential by consumers in the retail sector, specifically targeting the grocery retail industry.

Design/Methodology/Approach: Our methodological framework incorporates a systematic review of previous literature and a meta-analysis of past studies that highlight the pivotal service elements within the chosen industry. Following the evaluation of existing literature, 55 studies met the inclusion criteria and were selected for further investigation. The systematic review first compiled information from multiple studies, which was then followed by a meta-analysis. This enabled us to statistically analyze the empirical data from the chosen studies, thereby drawing significant conclusions.

Findings: The analyses pinpoint that elements such as personal interaction attributes, product quality and availability, and reliable service are of utmost importance to consumers. Interestingly, customer satisfaction was the only outcome that was positively influenced by all the examined service attributes. Additionally, our findings underscore that certain moderators, such as geographic region and timing of the study, sway the relationship between service attributes and customer outcomes.

Originality: Despite numerous meta-analyses attempting to pinpoint the key service attributes for consumers, to the best of our understanding, this study is the first to focus on the retail industry, specifically on hypermarkets, supermarkets, or grocery stores. Therefore, this research bridges a gap in the literature and offers a significant contribution to the academic community by proposing an agenda for future research on customer service factors. It also provides invaluable insight for retail managers, outlining numerous practical implications and offering guidance.

Keywords: Service quality attributes; Customer outcomes; Retail industry; Systematic literature review; Meta-analysis

INTRODUCTION

In the contemporary landscape, customers wield significantly more purchasing power due to the increased availability of information (Torlak, Uzkurt, & Özmen, 2010). To enhance the customer service level, retailers must offer options that augment the perceived value of their shopping experiences (Kursunluoglu, 2014). Superior customer service, coupled with a high-quality product that meets or surpasses expectations, elevates customer satisfaction and consequently their loyalty (Kursunluoglu, 2014). Conversely, failing to meet these expectations will drive disgruntled customers towards competitors (Umair, Zhang, Han, & Haq, 2019).

As emphasized by Prakash, Somasundaram, and Krishnamoorthy (2018), customer service is crucial for all industries and every company. Since retail business is essentially a service business (Davies, 2006), its characteristics diverge from other industries (Gagliano & Hathcote, 1994). This sector has witnessed rapid evolution over recent decades. Despite these changes, customers continue to value the service quality offered by retailers (Deb & Lomo-David, 2014). Furthermore, Amorim and Saghezchi (2014) propose that understanding the determinants of customer service in retail is pivotal in shaping superior strategies. Therefore, the evaluation and observation of critical customer service factors for this industry become important (Siu & Cheung, 2001). Consequently, the retail service quality scale formulated by Dabholkar, Thorpe, and Rentz (1996) has been upheld as a valid measure for this purpose in numerous contexts.

With this perspective, the aim of this research is to examine the service attributes crucial for customers in the retail grocery industry. To achieve this, our study will amalgamate a systematic literature review with a meta-analysis. Prior studies that identify determinants of service quality attributes in the retail industry will be analyzed. Thus, the central objective of this research is to respond to the following question: What are the critical factors for customer service in the retail grocery industry?

Over time, various meta-analyses have been performed to ascertain the service attributes most important to customers (Jung & Tanford, 2017; Kim & Cruz, 2019; Ladeira, Santini, Sampaio, Perin, & Araújo, 2016; Santini, Ladeira, Sampaio, & Perin, 2018; and Tanford & Jung, 2017). These studies have primarily been conducted in diverse service industries, primarily in tourism (Jung & Tanford, 2017, Tanford & Jung, 2017) and the banking sector (Ladeira et al., 2016; Santini et al., 2018). Additionally, Blut, Teller, and Floh (2018) executed a meta-analysis to pinpoint the most essential factors of the retail marketing mix.

Despite the existence of numerous meta-analyses concerning customer service determinants, to the best of our knowledge, none of these investigations were conducted in the retail industry, specifically focused on grocery-related establishments. Moreover, this is the only research that supplements the results of the meta-analysis with a systematic literature review. Therefore, this study bridges a gap in the literature and represents a significant contribution to the academic community. Additionally, it equips companies and managers with insights into the key service factors in the retail industry from the customers' perspective. Ultimately, this could aid companies in understanding the optimal strategies to increase customer satisfaction and loyalty, attract new clients, and enhance the overall performance of the company.

LITERATURE REVIEW

CUSTOMER SERVICE

Customers increasingly insist on not only high-quality products but also superior service that caters to their requirements (Bouzaabia, Bouzaabia, & Capatina, 2013; Ellinger, Daugherty, & Gustin, 1997; Renko & Ficko, 2010; Umair et al., 2019). They expect vendors to deliver products, along with added benefits, that help reduce their costs or augment their revenues (Kearney, 1994).

According to Kursunluoglu (2014), customer service encompasses all activities that enhance the shopping value for consumers. Therefore, if businesses provide commendable service to their customers, they can meet their expectations, leading to increased customer satisfaction (Kursunluoglu, 2014; Oh, 1999). Conversely, if a company fails to fulfill the expected, the customer will likely be discontented and may switch to a competitor (Umair et al., 2019).

Given this, customer service plays a pivotal role in the interaction between companies and their clientele and is increasingly viewed as crucial for industries (Ellinger et al., 1997; Politis, Giovanis, and Binioris, 2014). This is primarily due to globalization (Renko & Ficko, 2010) and changes in the industry environment (Ellinger et al., 1997; Renko & Ficko, 2010; Zhang, Vonderembse, & Lim, 2005). Hence, firms are striving more than ever to differentiate themselves from competitors and satisfy their clients, thereby converting them into loyal customers (Bouzaabia et al., 2013). By retaining customers, firms anticipate an upsurge in sales, leading to enhanced profitability (Umair et al. 2019). Donaldson (1986) encapsulates this by stating that customer service has positive effects on customer satisfaction, corporate image, and profitability.

Measuring Customer Service

Given the distinctive customer service factors between retail and service industries, several authors have developed relevant models catered to the retail sector since 1990.

Foundational models like SERVQUAL and SERVPERF laid the groundwork for other models such as the 51-item model developed by Guiry, Hutchinson, and Weitz (1992); the 24-attribute model designed by Vazquez, Rodríguez, and Ruiz (1995); and the Retail Service Quality Scale (RSQS) formulated by Dabholkar et al. (1996).

The RSQS model, frequently employed across various studies and contexts, includes 28 attributes divided into five main dimensions: physical aspects, reliability, personal interaction, problem-solving, and policy. These dimensions and sub-dimensions help retailers evaluate their service quality in each category and the overall quality, consequently highlighting areas requiring immediate improvement (Das et al., 2010).

Physical aspects measure the appearance of the stores and their employees, the presence of equipment, installations, and visual materials. This dimension also evaluates the convenience of the store, including store layout (Dabholkar et al., 1996). An effective store layout assists customers in product location and ease of movement. Previous studies suggest that store appearance is a crucial factor for customers (e.g., Jain & Aggarwal, 2018; Singh et al., 2010).

Reliability covers the promises stores make to their customers, accurate service delivery, maintaining the right inventory levels, and providing correct information (Dabholkar et al., 1996). By honoring promises, retailers can expect increased customer confidence, leading to loyalty (e.g., Nguyen, Nguyen, Cao, & Phan, 2016; Sivapalan & Jebarajakirthy, 2017).

Personal interaction involves not only employees inspiring confidence but also demonstrating courtesy and helpfulness towards customers (Vazquez, Rodríguez-Del Bosque, Díaz, & Ruiz, 2001). Consistent courtesy and prompt response can boost customer satisfaction, as noted in various studies (e.g., Das et al., 2010; Kitapci, Dortyol, Yaman, & Gulmez, 2013).

Problem-solving encompasses handling returns and exchanges, addressing complaints, and demonstrating sincere interest in resolving issues (Dabholkar et al., 1996). When customers’ problems are addressed, they are likely to feel satisfied and continue shopping at the store (Sivapalan & Jebarajakirthy, 2017).

Policy refers to the store’s decisions regarding the quality and variety of merchandise, payment methods, operating hours, parking facilities, and pricing (Dabholkar et al., 1996). With an effective retailing policy, customers are likely to continue patronizing the store (Sivapalan & Jebarajakirthy, 2017).

Customer Outcomes

To understand which service attributes are most important to customers, it is necessary to comprehend the outcomes influenced by the performance of those service factors.

In this regard, Bhuian, Balushi, and Butt (2018) and Kumar (2017) identified the repercussions of service quality factors. Kumar (2017) pinpointed store image, customer satisfaction, word-of-mouth communication, intention to switch, and loyalty intentions as primary outcomes of retail service attributes. Bhuian et al. (2018) stressed that while customer loyalty results from service factors, repeated purchases and intentions to recommend stem from that loyalty. Furthermore, several authors (Elmelegy, Ponnaiyan, & Alnajem, 2017; Espinoza, 1999; Huang, 2009; Jain & Aggarwal, 2018; Nadiri & Tümer, 2009; Siu & Cheung, 2001) identified overall perceived service quality as a variable influenced by service attributes.

Table 1 succinctly presents these five customer outcome measures.

TABLE 1 – SYNTHESIS OF CUSTOMER OUTCOME MEASURES (OWN ELABORATION)

Customer outcomes		
Overall service quality		Overall service quality, perceived service quality, retail service quality, service quality, value perceptions, critical failure, overall image
Customer satisfaction		Customer satisfaction; overall satisfaction, satisfaction with the store
Customer loyalty	*Loyalty*	Customer loyalty, customer preference, emotional loyalty, loyalty intention, trust, perceived quality of store brands, retention
	Patronage intention	Repurchase intention, retention, future consume behaviour, intend to buy, intend to shop, intend to switch, intend to reuse
	Intention to recommend	Intend to recommend, word of mouth communication

Overall service quality

Numerous attributes contribute to shaping customers' perceptions, which vary based on individual viewpoints. As per the model developed by Parasuraman et al. (1985), if these perceptions do not align with customers' expectations, a service quality gap is created. Therefore, overall perceived service quality is recognized as a result of service attributes from the customer's perspective.

Customer Satisfaction

As discussed earlier, if a company's service meets or surpasses customer expectations, it leads to increased satisfaction. Additionally, Anderson, Fornell, and Lehman (1994) suggest that a customer experiences satisfaction when they respond positively to an aggregate assessment of multiple purchase and consumption experiences. Consequently, satisfaction is not solely a result of service attributes quality, but it also incorporates the overall service quality, positioning it as a key metric of customer outcomes.

Customer Loyalty

According to Najjar (2019), service-providing companies continuously strive to bolster their customer loyalty. This can be identified in customers as repeat purchase behavior coupled with a psychological bond, as outlined by Kumar (2017). Loyal customers are not just less likely to switch to competitors, but they also tend to spend more than less loyal customers. Alongside repeat patronage, Kumar (2017) highlights that customers' loyalty towards a company leads to positive word-of-mouth communication. Therefore, customer loyalty, including patronage intention and the intention to recommend to others, is viewed as a significant customer outcome.

Patronage Intention

As per Pan and Zinkhan (2006), the concept of retail patronage intention incorporates two unique aspects: store selection and visit frequency. Store choice pertains to the customers' decision to frequent a specific store, considering past experiences. Conversely, visit frequency relates to the number of times each customer patronizes that store. Various authors have outlined different measures of patronage intention, including the intention to reuse the service (Amorim & Saghezchi, 2014), intention to shop (Das et al., 2010), intention to buy (Nadiri & Tümer, 2009), customer retention (Julian, Ahmed, Wel, & Bojei, 2015), future consumption behavior (Siu & Chow, 2004), intention to switch (Kumar, 2017), and customer repurchase intention (Noyan & Şimşek, 2012).

Intention to Recommend

Zeithaml, Berry, and Parasuraman (1996) define the intention to recommend as the likelihood and propensity of a customer to suggest and give a positive review about a company to others. Also known as word-of-mouth communication, this idea is deemed a behavioral intention measure resulting from the perceived loyalty of each customer, as corroborated by several authors (Sirohi, McLaughlin, & Wittink, 1998; Siu & Cheung, 2001; and Das et al., 2010).

RETAIL INDUSTRY: A FOCUS ON GROCERY STORES

The retail industry involves selling goods directly to the end consumer, representing trade for consumption rather than resale. The industry comprises various retail establishments, including department stores, discount stores, specialty stores, grocery stores, convenience stores, category killers, and e-tailers (Moore, 2005). Retailers utilize several factors, collectively known as the retail mix, to satisfy customer needs and influence their purchases. This includes merchandising, service offerings, pricing, advertising and promotions, store design, and location (Moore, 2005).

There is a universal understanding among industry practitioners and academics that the retail industry's competitive intensity is escalating in both domestic and international markets (Moore, 2005). This industry is constantly evolving, and from the inception of the first retail store to the present where e-commerce has gained significant importance, the retailer's roles have consistently revolved around accessibility, customer convenience, size convenience, associated services, supply chain management, value chain administration, research, information provision, economic development, and employment generation.

The sale of non-specialized goods with a predominance of food, beverages, or tobacco products is classified within the retail industry by the European Community under NACE code G47.1.1. This category includes hypermarkets, supermarkets, grocery and convenience stores, and other general stores, indicating a wide variety of goods, with food, beverages, or tobacco products as the primary offerings.

THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

As previously mentioned, the main objective of this research is to identify the key factors impacting customer service in the retail grocery industry. After identifying and understanding the attributes that significantly influence service quality, this study also intends to analyze the effect of moderators on the relationship between service factors and customer outcomes.

Existing literature has extensively studied and analyzed the impact of service attributes on customers. However, authors often use distinct approaches to define criteria. Thus, to yield beneficial and comprehensible results, it's crucial to establish guidelines to compile all data.

The dependent variable, customer outcomes, was analyzed based on the most significant repercussions identified in the literature. To identify the most critical service attributes for customers, the existing consequences can be categorized into service quality, customer satisfaction, customer loyalty, patronage intention, and intention to recommend.

Given the choice of determinants for customer service, a conceptual model was required to encapsulate the wide range of attributes that influence customer decisions. Consequently, the independent variables were grouped into 22 major factors. These include visual attractiveness, store cleanliness, store atmosphere and equipment, employee appearance, convenient layout, convenient location, reliable service, customer safety, merchandise availability, clear and detailed product information, employee knowledge and interest, employee availability, employee attitude, interest in problem-solving, complaints handling, returns and exchanges handling, merchandise quality, convenient parking, convenient operating hours, convenient payment methods, product variety, and competitive pricing.

This research also explores the presence of moderators. Thus, the impact of different factors such as geographic focus, study timeline, and store type on the relationship between service factors and customer outcomes will be analyzed. The research framework is depicted in Figure 1.

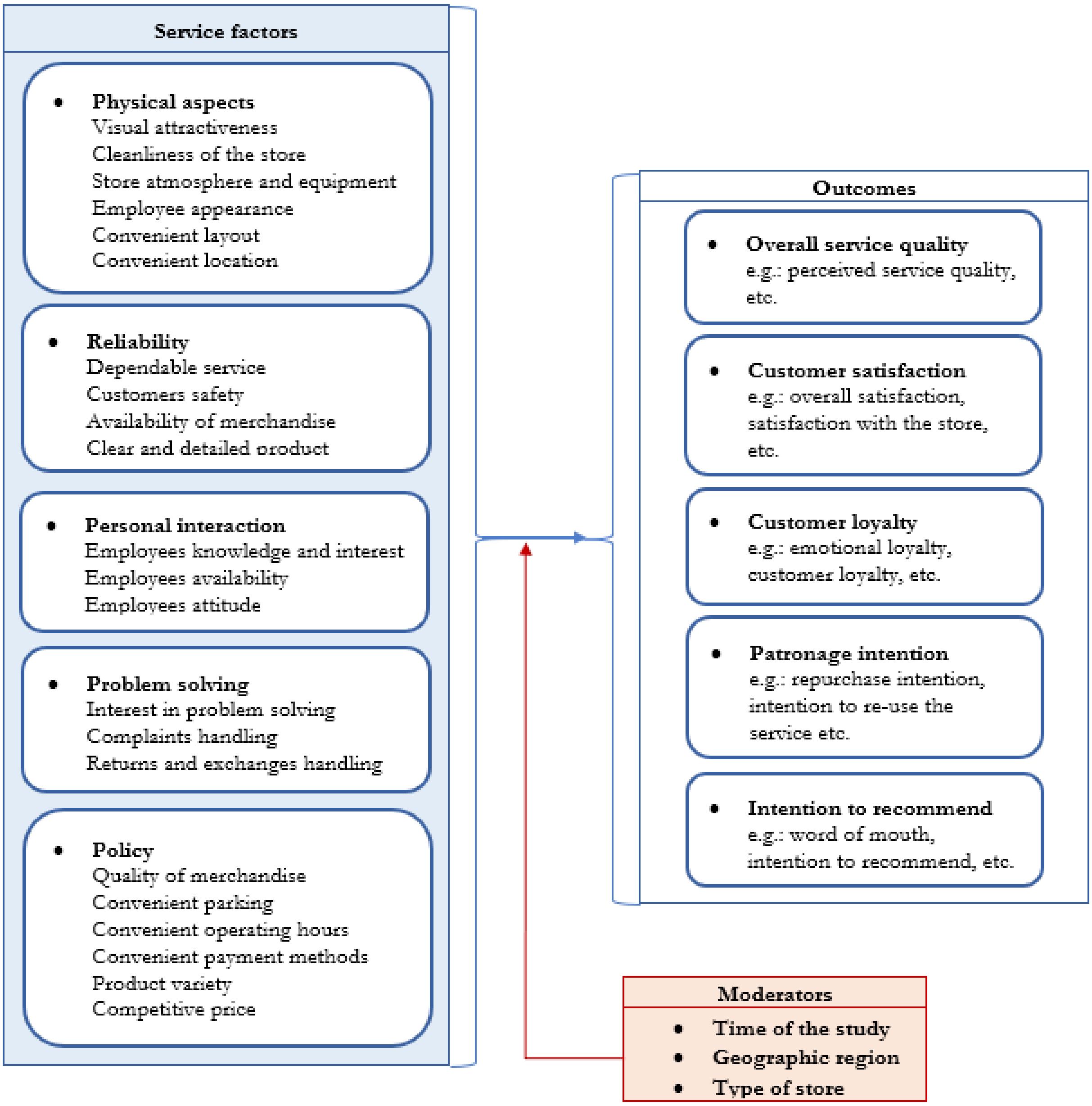

FIGURE 1 – RESEARCH FRAMEWORK (OWN ELABORATION)

Several studies and models suggest that service attributes broadly impact customers. Hence, the first hypothesis to be tested is:

H1: Hypothesis 1 – There is a positive correlation between service quality attributes and customer outcomes.

As the primary objective of this research is to identify which service factors are most significant to customers, it's crucial to determine which attributes have the most positive impact on customer outcomes. Thus, the second hypothesis is formulated to investigate the influence of each service attribute on customer outcomes:

H2: Hypothesis 2 – Service quality attribute “i” is positively correlated with customer outcome “j.” (“i” = visual attractiveness, store cleanliness, store atmosphere and equipment, employee appearance, convenient layout, convenient location, dependable service, customer safety, merchandise availability, clear and detailed product information, employee knowledge and interest, employee availability, employee attitude, interest in problem-solving, complaints handling, returns and exchanges handling, merchandise quality, convenient parking, convenient operating hours, convenient payment methods, product variety, and competitive price; “j” = overall service quality, customer satisfaction, customer loyalty, patronage intention, and intention to recommend).

Lastly, the impact of service attributes on customers may differ across various contexts, such as region, the timing of the study, and store type. According to Ahmad, Ihtiyar, and Omar (2014), comparing service quality across countries is essential as it informs retailers about the vital service attributes in diverse environments. This idea is evident in several studies (Ahmad et al., 2014; Espinoza, 1999; Martínez-Ruiz, Jiménez□Zarco, & Cascio, 2011), which show that different cultural groups assign varying importance to service quality dimensions. Concerning the study’s timing, research by Martínez-Ruiz, Blazquez-Resino, Pino, and Capestro (2017) found that the significance of factors changed over different years. Anselmsson and Johansson (2014) investigated the service quality differences between two store formats. Therefore, to examine if any potential factor influences, the third hypothesis to be tested is:

H3: Hypothesis 3 – The relationship between service attributes and customer outcomes is moderated by certain factors.

METHODOLOGY

Two distinct methodologies are employed: a systematic literature review supplemented by a meta-analysis.

DATA COLLECTION

The methodological process began with a literature search intended to identify articles relevant to this specific study. The literature review commenced using Scopus and Web of Science databases. The review resulted in the following search terms: “Customer service,” “Service quality,” “Retail service quality,” “RSQS,” “RSQ,” “Retail,” “Grocery,” “Hypermarkets,” “Supermarkets,” “Convenience store,” “Factors,” “Determinants,” “Antecedents,” “Dimensions,” and “Prioritization.”

Following the identification of research papers from the databases, specific inclusion criteria were applied to select studies that measured service quality in the retail industry.

Firstly, studies identifying service factors in the grocery retail industry were incorporated. This inclusion required two distinct evaluations, including studies that analyze the relationship between service attributes and the selected customer outcomes and those recognizing the critical factors of customer service.

Regarding service attributes and customer outcomes, research should have at least one specific independent and one dependent variable relevant to our research question. They must also incorporate a minimum of essential statistical information for the chosen method of meta-analysis.

On the other hand, investigations identifying critical factors for customer service in the retail industry were included. Recognizing clients’ expectations of each service attribute, as suggested by Vazquez et al. (2001), is vital as it provides retailers with information about the most relevant dimensions from the customer perspective. Hence, investigations that explicitly state the most critical factors for excellent service quality, research prioritizing those dimensions, and studies that rank or examine customers’ expectations were incorporated.

Secondly, only original research publications employing data collection methods such as questionnaires, interviews, or focus groups to identify customer service determinants were used.

Lastly, the research is limited to articles published in English or Portuguese between 1990 and 2020 with full-text availability. Table 2 summarizes the criteria used for including or excluding each identified research.

TABLE 2 – INCLUSION CRITERIA

Inclusion criteria
1st a) The study includes: studies that analyse the relation between service factors and customer outcomes
1st b) The study includes: researches that identify the critical factors for customer service in the retail industry
2nd Minimum number of analysed relations: researches must include at least one service attribute and one customer outcome
2nd Statistical data: if the study analyses the relation between service attributes and customer outcome, that investigation must incorporate the right amount of statistical data for the meta-analysis method chosen
3rd Data type: Original research papers
4th Language of the article: English or Portuguese
5th Published years: between 1990 and 2020
6th Availability: Full-text availability

CODIFICATION PROCESS

We developed a coding scheme divided into three sections: basic paper information, critical methodological details, and data extracted from the results.

The first segment encompasses methodological aspects of each study, such as research title, author, journal, year, geographic region, store type, number of associated companies, data collection method, sample size, response rate, and the instrument used.

The second subdivision includes service attributes in the retail industry and customer outcomes influenced by these attributes. Service determinants are treated as independent variables and, to facilitate the analysis, they were condensed into 22 factors based on the Retail Service Quality Scale (RSQS) model developed by Dabholkar et al. (1996). Table 3 provides a detailed breakdown of the methodological aspects.

In the third and final section of data collection, the compilation of specific meta-analysis details is articulated. Thus, when quantitative information was available, it was examined and collected. Upon careful review of the studies, it was noted that most cases used regression analyses including standardized beta coefficients (β), representing the impact of each dimension on various customer outcomes. Other studies presented different or additional information (e.g., t-tests, correlation r, p-values). Despite the differences in analysis methodologies, it is necessary to convert each coefficient value into the same effect size metric (Goh, Hall, & Rosenthal, 2016). Therefore, given this research’s objective to assess the impact of each service factor on customer outcomes - measured by the correlation and regression between variables - Pearson’s r was selected as the metric to measure effects.

TABLE 3 – METHODOLOGICAL ASPECTS CODIFICATION

Methodological aspects coded
1st **Year of the study:** 1990s, 2000-2009, 2010-2014, 2015-2020
2nd **Geographic region:** Asia, Africa, Europe, North America, South America, Several
3rd **Type of store:** Several Retail stores, Supermarkets, Hypermarkets, Minimarkets, Grocery, Convenience stores
4th **Number of associated companies:** 1 to 3, 4 to 6, 7 to 9, 10 or more companies, N.A.
5th **Type method of selecting data:** Survey, Interviews
6th **Sample size:** Below 100, 100 to 300, 300 to 500, 500 to 750, 750 to 1000, Above 1000
7th **Response Rate:** Below 40%, 40 to 80%, Above 80%, N.A.
8th **Instrument employed:** RSQS, SERVQUAL, PSQ scale, ECSI, N.A.
9th **Number of service attributes:** 1 to 5 attributes, 6 to 10 attributes, 11 to 15 attributes, more than 16 attributes
10th **Number of customer outcomes:** 1 outcome, 2 outcomes, 3 outcomes, 4 outcomes

Upon completing the data collection, the various analyses diverge. While studies with quantitative data such as correlation or regression coefficients proceed with the methodology outlined by Field and Gillet (2010), those without such statistics are incorporated into the systematic literature review section. Ultimately, a final qualitative synthesis is performed for these studies, as well as for investigations included in both analyses. This synthesis also considers the classifications applied to service quality attributes in the included publications.

AGGREGATION OF EFFECT SIZES

According to Field and Gillet's (2010) process, the fourth step, following the collection of relevant information and effect sizes from the reviewed studies, is conducting the meta-analysis itself. By aggregating effect sizes from various studies, the population effects can be estimated.

Field and Gillet (2010) suggest two paths to conceptualize meta-analysis: fixed-effects models and random-effects models. The fixed-effect model assumes that the average effect size from the population of included studies is fixed or easily predictable. In contrast, random-effects models are used when the average effect size varies significantly from study to study. Consequently, sample effect sizes should be homogeneous for fixed-effects models and heterogeneous for random-effects models (Field & Gillet, 2010).

At this point, we reference the process conducted by Goh et al. (2016). As previously mentioned, existing correlation coefficients r were examined to complete data analysis. Since most studies did not report correlation r, we collected different elements such as β values, which were later converted into a correlation coefficient. The procedure recommended by Peterson and Brown (2005) was employed for this conversion. After converting all measures into the same effect size, it was necessary to calculate the weighted mean effect size, giving more substantial studies more weight. Initially, Fisher's z transformation for normalization was applied using the Excel function "=fisher(x)". Then, the effect sizes, represented as $r\bar{z}$ were combined meta-analytically using a fixed-effects approach. However, random-effects models were evaluated here as they account for differences between studies due to distinct participants or treatments. Knoll and Matthes (2017) argue this approach is more realistic as respondents and study contexts vary across investigations. The general p-value of all included studies was summarized using the Stouffer test, and the combined Z was estimated. The random-effects approach required averaging the effect sizes for each combination of service factor and customer outcome.

These values will be classified according to Cohen's (1988) guidance, where an effect size is considered small if the coefficient is near 0,10, medium if near 0,30, and large if around 0,50. Distinct data points were analyzed using the estimated p-values for each aggregation of dependent and independent variables.

MODERATOR ANALYSIS

After the initial analysis, researchers typically explore potential advanced analyses, such as the examination of moderator variables. In this study, an available R software package was used to compare effect sizes based on moderator variables. This methodology allows us to test the impact of multiple potential moderators, including geographic region, study period, and store type.

MAIN RESULTS

RESEARCH SELECTION PROCESS

The process began with a literature search using the main search strings through selected online databases covering the period from 1990 to 2020. Initially, 1429 studies were found across the two databases, Scopus (n=786) and Web of Science (n=643). An additional 4 studies already selected were identified in the Scopus database, bringing the total to 1433 studies. Many publications were duplicated (n=316) one or more times. At the next stage, 543 publications unrelated to the selected sector or other non-personal selling methods were excluded. The bulk of these related to retail banking (n=181) and the apparel industry (n=40), and studies focusing on electronic retailing (n=206) were also discarded, reducing the total studies to 539. A significant number of studies (n=484) were not included in the final sample due to various reasons: 412 did not meet the main research goal, 30 did not include primary data, 7 had a publication date before 1990, and 35 were unavailable.

Ultimately, 55 studies were included. Upon reviewing the information in these studies, we found that only 35 provided sufficient statistical information for the meta-analysis. Four of these also yielded significant information for the systematic literature review. The remaining 20 were reviewed and the information synthesized. Figure 2 summarizes the article selection process.

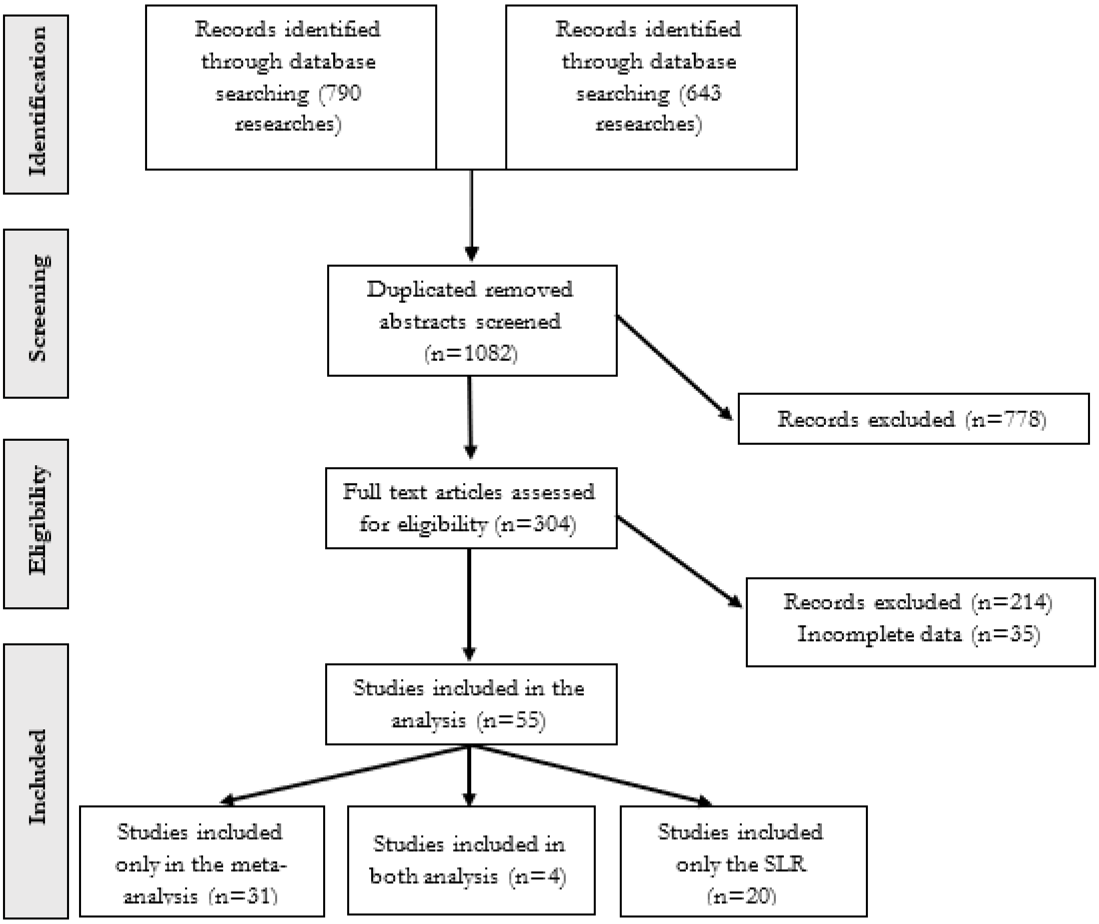
Identification
Records identified through database searching (790 researches)
Records identified through database searching (643 researches)
Screening
Duplicated removed abstracts screened (n=1082)
Records excluded (n=778)
Eligibility
Full text articles assessed for eligibility (n=304)
Records excluded (n=214) Incomplete data (n=35)
Included
Studies included in the analysis (n=55)
Studies included only in the meta-analysis (n=31)
Studies included in both analysis (n=4)
Studies included only the SLR (n=20)

FIGURE 2 – PROCESS OF ARTICLES SELECTION

FINDINGS AND ANALYSIS

This section examines and discusses the results. It first presents the findings from the systematic literature review, followed by the results of the meta-analysis.

Systematic Literature Review Findings

Among the studies that identify or prioritize critical factors for customer service in the retail industry, 24 publications were found.

Of these 24 studies, the vast majority were conducted either between 2010-2014 (45,8%) or between 2015-2020 (41,7%). More than half of the studies included in the systematic literature review were conducted in Asia, used surveys exclusively in their research, and did not specify the industry coverage. Supermarkets were the most frequently researched store type, and both SERVQUAL and RSQS were widely used as foundational instruments.

Table 4 lists all critical factors for customer service in the retail industry, along with their frequency and percentage of occurrence in the 24 selected studies. Table 5 shows the number of times each service factor was considered among the top three critical factors.

Despite the existence of 22 factors, only 11 were identified as critical for customers in the retail industry, as shown in Table 4. This is because, in line with other researchers (Khan & Khan, 2013), we deemed the factors that appeared in over 50% of studies as the most important elements.

TABLE 4 – LIST AND FREQUENCY OF THE SERVICE FACTORS

Service factors	Perc. %	Frequency (n=24)	Service factors	Perc. %	Frequency (n=24)
Dependable service	91,7%	22	Cleanliness of the store	45,8%	11
Employees attitude	87,5%	21	Convenient parking	45,8%	11
Quality of merchandise	66,7%	16	Customers safety	45,8%	11
Availability of merchandise	62,5%	15	Convenient payment methods	41,7%	10
Employees knowledge and interest	62,5%	15	Product variety	37,5%	9
Competitive price	62,5%	15	Complaints handling	37,5%	9
Visual attractiveness	58,3%	14	Convenient operating hours	37,5%	9
Store atmosphere and equipment	54,2%	13	Returns and exchanges handling	33,3%	8
Convenient layout	54,2%	13	Convenient location	29,2%	7
Employees availability	54,2%	13	Clear and detailed product information	29,2%	7
Interest in problem solving	50,0%	12	Employees appearance	12,5%	3

Consequently, the key service factors deemed significant by customers encompass items from all five service dimensions: physical aspects (visual attractiveness, store atmosphere and equipment, and convenient layout); reliability (dependable service, and availability of merchandise); personal interaction (employees' knowledge and interest, employee availability, and employee attitude); problem solving (interest in problem resolution); and policy (quality of merchandise and competitive prices).

The most frequently mentioned service factor was dependable service (91,7%). As indicated by Table 5, within the selected literature, this attribute was the second most frequently acknowledged as significant (n=6). This observation is consistent across numerous studies from various geographic regions (e.g., Suresh, Mahadevan, & Abhishek, 2019; Tešić, 2020).

TABLE 5 – NUMBER OF TIMES THAT EACH SERVICE FACTOR IS CONSIDERED THE FIRST, SECOND AND THIRD MOST IMPORTANT

Service factors	1st	2nd	3rd	Service factors	1st	2nd	3rd
Dependable service	6	3	5	Cleanliness of the store	2	3	1
Employees attitude	3	3	3	Convenient parking	0	1	3
Quality of merchandise	7	2	1	Customers safety	2	4	2
Availability of merchandise	5	2	3	Convenient payment methods	1	0	0
Employees knowledge and interest	0	3	4	Product variety	1	0	3
Competitive price	2	4	4	Complaints handling	0	1	1
Visual attractiveness	2	1	2	Convenient operating hours	2	0	0
Store atmosphere and equipment	1	0	0	Returns and exchanges handling	0	1	0
Convenient layout	2	3	0	Convenient location	2	2	0
Employees availability	3	1	1	Clear and detailed product information	1	2	0
Interest in problem solving	1	1	0	Employees appearance	1	0	0

Employee attitude was the next most prevalent service factor (87.5%) and was deemed the most significant dimension in several studies (e.g., Lin, 2010; Ulkhaq et al., 2019). In other studies, despite the presence of more significant attributes, employee attitude still held a high rank in terms of its service provision to customers (e.g., Ahmad et al., 2014; Naik, Gantasala, & Prabhakar, 2010; Souza, Ferreira Filho, Santos, Martins, & Ramos, 2016).

The quality of merchandise was identified in 16 out of the 24 selected studies (66,7%), and it was considered the most important factor, surpassing dependable service, in most instances (n=7) (e.g., Amorim & Saghezchi, 2014; Nilsson, Gärling, Marell, & Nordvall, 2015; Wang, Zhao, & Qiao, 2011).

Then, with a frequency of 62,5%, the availability of merchandise, employees' knowledge and interest, and competitive price emerged. Even though these three attributes appeared with the same frequency, their perceived importance varied. Employee knowledge and interest was often identified as the second or third most important attribute (e.g., Haming, Murdifin, Syaiful, & Putra, 2019; Souza et al., 2016), but it was never recognized as the primary service item in any of the studies. In contrast, the availability of merchandise was deemed the most important factor in five studies (e.g., Adam, Tengeh, & Cupido, 2018; Chuang, 2010; Lin, 2010), and competitive price was in one (Lin, 2010).

Subsequently, with a frequency of 58,3%, visual attractiveness appeared. This factor was deemed the most critical in two distinct studies conducted in Asia between 2010 and 2014 (Ahmad et al., 2014; Singh et al., 2010).

Finally, store atmosphere and equipment, convenient layout, and employees' availability each with 54,2%, and interest in problem solving with 50% incidence, were considered the least common factors in the selected literature. While Singh et al. (2010) found store atmosphere and equipment and convenient layout to be the most important factors, Lin (2010) found convenient layout and employees' availability to be of highest importance. Additionally, employees' availability was considered the most significant element by Feinberg (1995), and interest in problem-solving was deemed the most important by Haming et al. (2019).

Therefore, based on the publications included in the systematic literature review, the most important service attributes for customers are dependable service, employees' attitude, quality of merchandise, availability of merchandise, employees' knowledge and interest, and competitive price.

Meta-analysis Findings

For the meta-analysis, 35 studies were included. The application of Fisher's method yielded the $r\bar{z}$, which facilitated various levels of analysis. First, the impact of service factors on the measures of outcomes (overall service quality, customer satisfaction, customer loyalty, patronage intention, and intention to recommend) was analyzed. Then, the influence of service attributes on customer outcomes was evaluated in light of the existence of distinct moderators. Table 6 displays the results concerning the effect of service attributes on consumer outcomes. In total, 103 effects were identified from the data collected. Similar to the systematic literature review, Asia was the geographic region with a higher number of studies, survey was the preferred data collection method, and most of the publications did not disclose the industry coverage. However, in this case, more studies were conducted between 2015 and 2020, more research was carried out in various types of stores (37,1%), and the RSQS instrument was most frequently used (45,7%).

Applying Fisher's method and considering the sample size allowed for the calculation of the weighted mean of the effect sizes. This value enabled the assessment of the significance of each pair of variables by analyzing the existing p-values. With the weighted mean analysis, the random effects for each pair of variables were estimated.

The first hypothesis tested was the assumed positive link between service factors and customer outcomes. Hence, the null hypothesis H1 states: service quality attributes are not positively correlated with customer outcomes in the retail industry.

In order to analyze the relationships between service quality attributes and customer outcomes, only two pairs of relationships could be considered at a time. For each pair of variables under analysis, the weighted $r\bar{z}$ was calculated. Subsequently, random effects could be estimated. Table 6 presents the coefficients and their significance concerning the random approach. Estimates were based only on random-effects models since fixed-effects models assume that all studies included in the analysis are alike and have the same true effect size (Knoll & Matthes, 2017). Afterward, Stouffer's Z test was applied. The results demonstrate that service quality attributes are significantly positively correlated with customer outcomes, as the obtained Z combined with the corresponding p-value was <0,00001. Therefore, the null hypothesis can be rejected.

The second goal of this research is to identify whether individual service quality attributes are positively correlated with customer outcomes. Thus, the corresponding null hypothesis H2 states: service quality attribute i is not positively correlated with customer outcome j, where i represents visual attractiveness, cleanliness of the store, store atmosphere and equipment, employee appearance, convenient layout, convenient location, dependable service, customer safety, availability of merchandise, clear and detailed product information, employees' knowledge and interest, employees' availability, employees' attitude, interest in problem-solving, complaints handling, returns and exchanges handling, quality of merchandise, convenient parking, convenient operating hours, convenient payment methods, product variety, and competitive price; and j represents overall service quality, customer satisfaction, customer loyalty, patronage intention, and intention to recommend.

Table 6 indicates that the majority of the 22 service attributes are positively correlated with all five established dependent variables. However, distinct levels of significance for each pair of variables were detected.

TABLE 6 – DETERMINANTS OF CUSTOMER OUTCOMES
(CORRELATION EFFECT, LB – LOWER BOUND, UB – UPPER BOUND)

	Service factors	Customer outcomes														
		Overall Service quality			Customer Satisfaction			Customer Loyalty			Patronage intention			Intention to recommend		
		Effect	LB	UB	Effect	LB	UB	Effect	LB	UB	Effect	LB	UB	Effect	LB	UB
Physical aspects	Visual attractiveness	0,317	0,196	0,429	0,340	0,222	0,448	0,226	0,035	0,402	0,249	0,167	0,327	0,301	0,192	0,403
	Cleanliness of the store	0,347	0,258	0,431	0,372	0,192	0,527	0,294	0,129	0,442	0,238	0,130	0,341	0,239	0,095	0,374
	Store atmosphere and equipment	0,299	0,178	0,411	0,412	0,272	0,534	0,259	0,109	0,398	0,253	0,155	0,346	0,301	0,192	0,403
	Employee appearance	0,325	0,180	0,457	0,303	0,162	0,431	0,373	0,262	0,474	0,420	0,378	0,461			
	Convenient layout	0,244	0,103	0,376	0,366	0,180	0,528	0,259	0,109	0,398	0,239	0,120	0,351	0,268	0,157	0,373
	Convenient location	0,437	0,329	0,534	0,384	0,204	0,539	0,310	0,216	0,399						
Reliability	Dependable service	0,352	0,220	0,472	0,339	0,246	0,427	0,220	0,052	0,377	0,265	0,126	0,395	0,237	0,173	0,299
	Customers safety	0,407	0,340	0,470	0,342	0,225	0,449	0,358	0,046	0,606	0,336	0,241	0,426	0,256	0,187	0,322
	Availability of merchandise	0,371	0,285	0,450	0,337	0,249	0,419	0,353	0,137	0,537	0,306	0,124	0,468	0,242	0,181	0,301
	Clear and detailed product information				0,352	0,218	0,473	0,242	0,043	0,423				0,419	0,322	0,506
Personal interaction	Employees knowledge and interest	0,398	0,311	0,479	0,371	0,259	0,474	0,342	0,207	0,464	0,372	0,236	0,494	0,235	0,163	0,305
	Employees availability	0,361	0,277	0,440	0,358	0,254	0,454	0,352	0,197	0,491	0,370	0,190	0,525	0,241	0,149	0,329
	Employees attitude	0,411	0,328	0,488	0,373	0,281	0,458	0,353	0,201	0,489	0,383	0,214	0,530	0,239	0,165	0,311
Problem solving	Interest in problem solving	0,322	0,189	0,443	0,259	0,125	0,383	0,147	0,026	0,263	0,330	0,165	0,478	0,233	0,084	0,372
	Complaints handling	0,332	0,150	0,492	0,414	0,140	0,629	0,176	-0,097	0,424	0,254	0,132	0,369	0,188	0,015	0,351
	Returns and exchanges handling	0,334	0,202	0,454	0,355	0,207	0,488	0,151	-0,019	0,313	0,336	0,157	0,494	0,308	0,180	0,425
Policy	Quality of merchandise	0,403	0,325	0,475	0,435	0,343	0,518	0,330	0,217	0,433	0,235	0,151	0,315	0,272	0,175	0,364
	Convenient parking				0,264	0,113	0,403	0,269	0,019	0,487	0,178	0,054	0,297	0,212	0,102	0,317
	Convenient operating hours	0,312	0,197	0,418	0,427	0,262	0,568	0,228	0,071	0,373	0,342	0,026	0,596	0,236	0,122	0,344
	Convenient payment methods	0,258	0,182	0,331	0,356	0,275	0,432	0,228	0,071	0,373	0,205	0,121	0,287	0,250	0,156	0,340
	Product variety	0,380	0,276	0,474	0,396	0,244	0,529	0,386	0,319	0,449				0,313	0,196	0,421
	Competitive price	0,182	-0,127	0,458	0,302	0,189	0,406	0,095	-0,086	0,271	0,368	0,272	0,456	0,313	0,196	0,421

▆ ▒ ░ □ Respectively significant at 0,001; 0,01; and 0,05; and Non Significant

In terms of physical aspects, the outcomes imply that all six included attributes significantly influence overall service quality, customer satisfaction, and customer loyalty. As per Cohen's (1988) classification, the majority of these relationships are classified as medium due to the effect sizes for these three results being close to 0,3. The data indicates that a convenient location is the principal determinant of overall service quality (0,437), while the store atmosphere and equipment primarily drive customer satisfaction (0,412). Employee appearance, however, plays a crucial role in fostering customer loyalty (0,373) and patronage intention (0,420). Unfortunately, due to insufficient data, it wasn't feasible to examine the correlations between employee appearance and recommendation intention, or between convenient location and both patronage intention and recommendation intention. For the remaining pair of variables, a medium influence of the attributes on patronage intention and intention to recommend was discovered.

In the reliability dimension, all attributes emerged as critical determinants of satisfaction and recommendation intention, with p-values <0,001. Within this dimension, dependable service and availability of merchandise were the only factors that demonstrated significance across all five customer outcomes. While customer safety has the most significant impact on overall service quality (0,407) and patronage intention (0,336), clear and detailed information stands out in terms of customer satisfaction (0,352) and recommendation intention (0,419). When it comes to customer loyalty, customer safety did not show any significance, while availability of merchandise had the greatest influence.

All personal interaction factors displayed a positive correlation with all customer outcomes (p-values <0,001). These factors tend to have a medium-to-large effect on customer outcomes, with the exception of recommendation intention, where the service attributes' influence is estimated to be medium-to-small. Employee attitude was the principal driver for all customer outcomes, excluding recommendation intention. Here, employees' availability had a greater effect (0,241).

The problem-solving dimension revealed a non-significant effect of both complaints handling and returns and exchanges handling on customer loyalty, implying that interest in problem-solving is the only factor impacting customer loyalty (0,147). The data also demonstrated a medium impact of the three included factors on the remaining four customer outcomes. It should be noted that while returns and exchanges handling is a critical factor for overall service quality (0,334), patronage intention (0,336), and recommendation intention (0,308), complaints handling stands out for customer satisfaction (0,414).

For the policy dimension, the findings suggest that quality of merchandise, convenient operating hours, and convenient payment methods are key factors influencing patronage as they are positively associated with all five outcomes. Due to limited information, the relationships between convenient parking and overall service quality and product variety with customer loyalty and patronage intention could not be analyzed. Given these two independent variables, a positive significance for all the remaining correlations was found. Competitive pricing is a key determinant of customer satisfaction, patronage intention, and recommendation intention (p-value <0,001). However, this attribute's influence on customer loyalty and overall service quality was not detected. The quality of merchandise is the most crucial factor and has a medium-to-large effect on overall service quality (0,403) and customer satisfaction (0,435). This differs from the remaining outcomes, where competitive pricing is the primary driver for patronage intention (0,368) and recommendation intention (0,313), and product variety for customer loyalty (0,386).

Hence, in light of the meta-analysis results, all five dimensions include factors that were significant for all five customer outcomes: physical aspects (visual attractiveness, store cleanliness, store atmosphere and equipment, and convenient layout); reliability (dependable service and merchandise availability); personal interaction (employees' knowledge, interest, and availability); problem-solving (interest in problem-solving); and policy (quality of merchandise, convenient operating hours, and convenient payment methods).

These findings align with those of Blut et al. (2018), who found that service quality attributes directly influence customer outcomes across the entire retail industry, including e-tailing and specialized stores. Blut et al. (2018) also discovered that all attributes affect customer satisfaction. However, our study differs somewhat because even though product quality is positively correlated with all outcomes, other attributes also exhibited strong positive impacts on the established customer outcomes. This difference can be attributed to the fact that our research primarily focuses on food-related retail stores.

Based on the results obtained, we can confidently support Hypothesis 2. The third hypothesis, which posits the influence of moderators on the relationship between service quality attributes and customer outcomes, was also tested. The considered moderators were time, region, and store type. The null hypothesis H3 states: the relationship between service attributes and customer outcomes is not affected by moderators (time, geographic region, store type).

Before examining the final p-values of the relationships between service quality attributes and customer outcomes moderated by other variables, it was noted that this analysis was only conducted on 56 out of the 103 pairs of variables. Due to data limitations, it was impossible to perform this analysis for the ‘intention to recommend’ outcome.

In testing the moderating effect of geographic region, it was observed that it had more positive significance in relationships between attributes and overall service quality. The correlation between service attributes and both customer satisfaction and patronage intention were also affected by location. For these customer outcomes, Asia followed by Europe, were deemed significant most frequently. Store atmosphere and equipment, convenient layout, and dependable service represent the attributes most affected by Europe’s geographic region in terms of overall service quality. Conversely, the relationships between merchandise availability, employees’ attitude, and convenient operating hours with patronage intentions were significantly influenced by studies conducted in Asia. Additionally, the pair of variables consisting of customer satisfaction and convenient operating hours was also affected by location.

A review of the results showed that the South America cases were not as significant for customer service attributes as the other geographic regions. This may be due to the underdevelopment of countries in this region. Only in the correlation between visual attractiveness and overall service quality was a significant effect of the South America region detected (p-value <0,001). This aligns with Espinoza’s (1999) findings that physical aspects were the most important dimension for customers from Peru.

The analysis revealed that the time of study had a significant negative effect on several correlations. Patronage intention, followed by overall service quality and customer satisfaction, were the outcomes most affected by the time of investigation when related to service attributes. Compared to geographic region, the time of study is estimated to have less significance as a potential moderator. Merchandise availability and convenient operating hours were the attributes most frequently affected by the period.

The time of study can also have an impact on customers, although less likely than geographic regions. For Martínez-Ruiz et al. (2017), customer satisfaction may change over time due to market development and economic trends. Their study found that before an economic downturn, merchandise quality was the main service attribute. This changed over the years, with convenient location, personal interaction, and a pleasing shopping environment gaining significance post-depression. Considering the economic crisis that occurred between 2008 and 2013, this supports the earlier findings. This is illustrated by the negative effect observed in the relationship between store atmosphere and equipment and convenient layout with overall service quality for the years 2000-2010, and the positive impact of these factors on customer loyalty for the period 2015-2020.

Hardly any correlation was significantly impacted by the store format. The only instance was the negative effect of both grocery and hypermarkets on the link between convenient operating hours and customer satisfaction.

Many of the p-values are significant at 5%, leading us to reject the null hypothesis of the presence of moderators, such as geographic region and time of the study, in the relationship between service attributes and customer outcomes. Therefore, Hypothesis 3 is supported.

This research offers practical implications for retail managers, especially regarding the determinants of service attributes for food-related retail establishments. The attributes having the highest impact on customer outcomes, such as overall service quality, customer satisfaction, and customer loyalty, include dependable service, quality and availability of merchandise, and employees’ attitude, knowledge, and interest. Hence, managers may wish to invest in:

- employee training practices for personal and social skill development,
- inventory systems that favor merchandise availability like lean management or periodic review systems,

- supplier selection processes to ensure higher merchandise quality, and
- quality control systems at the source or upon merchandise arrival to the company.

This study enhances our understanding of the effect of service factors on customer outcomes and offers direction for future research. Possible research paths include:

- comparing electronic retail with traditional store retail since e-channels are rapidly replacing traditional ones;
- assessing the sociodemographic of respondents to detect any variations between customer characteristics;
- studying the impact of other moderators like economic conditions or pandemic situations, such as COVID-19, to identify the effect of service quality attributes on customers in different contexts.

Finally, a crucial takeaway for researchers is the importance of reporting their full correlation matrix among all dependent and independent variables when using regression-based methods. Such transparency will bolster the rigor of research and make data accessible to other researchers.

CONCLUSION

The aim of this research was to identify the service attributes that are pivotal to customers in the retail sector, with a particular emphasis on the grocery retail industry. To achieve this, data from previous studies identifying critical service attributes in the retail industry were collated. This was followed by a combined systematic literature review and meta-analysis.

The systematic review and meta-analysis unveiled a significantly positive correlation between service quality attributes and customer outcomes in the grocery retail industry. Therefore, managers ought to consider these service attributes in their decision-making processes.

The systematic literature review's findings revealed that dependable service, coupled with employees' attitude, the quality and availability of merchandise, employees' knowledge and interest, and competitive pricing were frequently noted attributes in the reviewed literature. Notably, the quality of merchandise and dependable service were the most prioritized factors across most studies.

The meta-analysis showed that many service factors positively impacted different outcome variables. However, certain factors exhibited major significance (p-value <0.001) across all outcomes. These factors encompassed personal interaction attributes, customer safety, convenient operating hours, convenient payment methods, and quality of merchandise. Moreover, factors such as visual attractiveness, store cleanliness, dependable service, merchandise availability, interest in problem-solving, convenient operating hours, and convenient payment methods, demonstrated significant impacts on overall service quality, customer satisfaction, customer loyalty, patronage intention, and intention to recommend.

Consequently, after conducting both analyses, it was concluded that the relationships between customers and employees, dependable service, and the continuous availability of quality merchandise were universally recognized as crucial factors for customers. As such, it is advisable for retail managers to implement strategies to enhance these factors.

Thus, this study offers actionable insights for managers by identifying key service quality attributes requiring attention and improvement. This investigation fills a research void, as it is the only study that amalgamates both a meta-analysis and a systematic literature review to highlight the most important service factors for customers in the retail industry, particularly non-specialized stores. Hence, this research represents a substantive contribution to the academic community.

Despite the comprehensive efforts to encapsulate as many findings as possible, this study does have some limitations. Firstly, the analysis is confined to a limited number of studies. This limitation is due to the paucity of literature about the relationship between service attributes and customer outcomes in generalist stores. As such, this area could be explored in further research to provide more valuable insights for managers and academics regarding the most crucial customer services. The second limitation pertains to the conversion of statistical coefficients to Pearson's r. Although this conversion is employed extensively in many studies, including several similar studies in this meta-analysis, the β coefficient to r conversion recommended by Peterson and Brown (2005) is not entirely accurate. However, given the high prevalence of studies providing only regression coefficients as statistical data, it was imperative to include these investigations. The benefits of including these analyses outweigh the effects of excluding them, which would reduce the sample size. A key takeaway from this is the necessity for researchers using regression-based methods to always report their full correlation matrix among all dependent and independent variables. This transparency will enhance the rigor of research and make data accessible to other researchers. Finally, future research could investigate the impact of other moderating factors such as economic conditions or pandemic situations like COVID-19, to discern the effects of service quality attributes on customers in diverse contexts.

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The Perceived Risk of Purchasing OTC Drugs: A Comparative Study of Pharmacies with Different Levels of Digitalization

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ABSTRACT

Brick-and-mortar pharmacies are facing strong competition from online pharmacies and are using digital techniques in their salesrooms as a counterstrategy. This study examines how digitalization affects purchase intentions among German customers. Perceived purchase risk, as a barrier to purchase, is compared for three types of pharmacies: non-digitalized pharmacies with conventional product displays (shelves) for products, digitalized pharmacies with digital signage displays for product presentation, and online pharmacies. Six risk types (performance, physical, psychological, financial, social, and privacy risks) and their effects on overall risk perception as well as purchase intentions are investigated in an online survey with a within-subject design. Results show that customers prefer non-digitalized pharmacies for shopping and rate their risk as the lowest. Digitalized brick-and-mortar pharmacies are ranked in the same league as online pharmacies in terms of risk assessment. The purchase intention in digitalized brick-and-mortar pharmacies is nevertheless higher than in online pharmacies.

Keywords: Community Pharmacy – OTC Drug Presentation – Risk – Online Pharmacy – Digitalization Strategy

Funding:

No funding received.

INTRODUCTION

The fact that the retail sector is undergoing structural change can hardly be denied. Neither can the fact be denied that the internet plays an important role in this development. The market of pharmaceuticals is also experiencing changes (Fortune Business Insights 2019). Even though brick-and-mortar pharmacies (BMPs) in Germany still have the majority of market share in the sale of pharmaceuticals, they face strong competition from online pharmacies (OPs) (Tebroke 2019; Albrecht et al. 2020). In Germany, there are especially in the field of over-the-counter (OTC) drugs big changes. OPs have already achieved a market share of approx. 20 % in this area (ABDA – Bundesvereinigung Deutscher Apothekerverbände e. V. 2021).

The area of OTC drugs is a core competence in pharmaceutical consulting since customers can decide independently of physicians to buy or not because no prescription is needed. Also in this area, the consultation with pharmacists is a basis to create trust and loyalty in a BMP, which is a great advantage for BMPs (Wieringa et al. 2015; Sapic et al. 2019; Dölger 2021). Although generally, BMPs do not have to deal with customer adoption concerns, as is the case with OPs (Ma 2021; Sabbir et al. 2021), they must prepare for battle with OPs, since convenience aspects of OPs attract customers (Pramuk 2020).

Regarding OTC drugs, BMPs have to overcome some obstacles to sales because the German laws do not allow the self-service of customers. For this reason, OTC drugs are stored behind the sales counter and conventionally placed on shelves. These circumstances limit the presentation place and options, which makes it challenging for BMPs to offer the customers possibilities to browse through the OTC product assortment autonomously. In contrast, OPs are not limited in the product number and have nearly unlimited presentation options. In addition, they can easily present products that are not instantly available. Furthermore, customers can discover product properties completely autonomously and retrieve in many ways, such as graphics, text, and videos, information. The easy, all-time available and unlimited access to products and information is one of the main drivers of internet purchases (Beauchamp and Ponder 2010; Holtgräfe and Zentes 2012; Jiang et al. 2013). Facing these facts leads to the question: How can BMPs bring the advantages of the internet into the store to attract customers and protect their market share?

Technology has always been a key driver of change in the evolution of retailing (Hopping 2000), and in this case, there is little choice but to embrace digital technologies to remain competitive (Dekimpe et al. 2020).

Regarding in-store technologies that can enrich customers' in-store experience, BMPs can use Digital Signage Displays (DSD) to replace conventional shelves. A big advantage of using this technology, is among others, that products are always available for the customer, which means that shelves are always filled without products having to be in stock. Product availability is a central feature to trigger sales (e.g., Park and Kim 2003; Conlon and Mortimer 2013). Furthermore, on DSDs, products can be shown larger than in original package size, provided with information via texts, videos, graphics, and complementary products. In the best case, DSDs present medications in a self-explanatory manner, so that the presentation facilitates the reception and processing of products for purchase decisions (Kim and Lennon 2008). Adopting DSDs in the sales rooms of BMPs could make them more competitive.

Nevertheless, when purchasing medicines, the lacking knowledge of general customers about the high-risk good medicines (Santos 2021) can indicate a high awareness of taking risks (Ashford et al. 2000; Alwon et al. 2015). When medicines are purchased in environments that differ from conventional BMPs, such as seen in OPs and supermarkets (e.g., Yin et al. 2016; Mortimer et al. 2019), this can increase the perceived purchase risk.

Perceived purchase risk is a key concept in the marketing literature to understand customers' purchase intentions (Bauer 1960; Mitchell 1999; Ashford et al. 2000). It can be described as customers' inability to foresee the negative consequences of their purchase (Bauer 1960). Understanding the perceived risks from the consumer's perspective is an important criterion for determining whether the original intent to attract customers with DSDs and with that to compete with OPs, can be achieved.

Knowledge about the effects of DSDs in BMPs on customers is scarce. Only individual reports by pharmacists in relevant German pharmacy journals (e.g., Ditzel 2018a; Ditzel 2018b) and results of a field study in Germany exist (Ersöz and Schröder). In the mentioned study, named "Presenting OTC Drugs on Digital Signage Displays: Effects on the Perceived purchase Risk", we compared in a between-subject design customers' perceived risks after purchasing

OTC drugs from BMPs equipped with a DSD or a conventional Display (CD) in the sales rooms of five operating BMPs in Germany (Ersöz and Schröder). Because of some shortcomings due to the real-life situation in the study design, we are interested to overcome these by capturing the differences for BMPs with precisely predefined stimuli, to be pictures of presentation techniques, in an online survey with a within-subject design. Moreover, in this study, we investigate the perceived purchase risk between BMPs with a CD, BMPs with a DSD, and OPs. To our knowledge, there exists no comparative study that examined perceived purchase risks for OTC drug presentations between BMPs and OPs.

From a theoretical point of view, our contribution enriches by comparing the perception of certain risk types for the purchase of particular goods, to be OTC drugs, depending on pharmacies' shopping environments' digitalization level. Furthermore, we examine how the risk types influence perceived overall risk and estimate the impact on purchase intention via Structural Equation Modeling with the Partial-Least-Squares approach.

The remainder of this study is organized as follows: section 2 explains the theoretical background of the study and reports the state of research and describes the hypotheses. Section 3 explains the methods used in the study and section 4 presents the results. We discuss the findings, draw implications for practitioners in section 5, and lastly, present the conclusion in section 6.

PERCEIVED PURCHASE RISK IN SHOPPING MEDICINES

THEORETICAL CONCEPT[1]

Perceived purchase risk is a key concept for explaining consumer behavior in shopping situations (Mitchell 1999). It can be described as the perceived probability of a negative outcome due to a purchase decision, interpreted subjectively by the decision-maker (Bauer 1960; Cox and Rich 1964; Cunningham 1967). In shopping situations, negative consequences cannot be completely foreseen before purchasing a product, since there is always imperfect information. Customers cannot know all the possible negative consequences of the purchase prior to it, so they are exposed to uncertainty in the purchasing situation (Bauer 1960; Cunningham 1967). Customers can try to reduce their perceived shopping risks by retrieving information, e.g., on the right of return, guarantees, and quality seals, to carry out the purchase. If the perceived risk is above the personal threshold of the customer and cannot be reduced, the purchase will be abandoned (Bauer 1960).

The negative consequence of the purchase and its probability, i.e. uncertainty of occurrence, have emerged as the key features of perceived risk (Cunningham 1967; Mitchell 1999).

The risk perception is particularly significant in the pre-purchase situation when alternatives are evaluated in the background of making a purchase decision (Bauer 1960), on the one hand with regard to the products (Cunningham 1967; Derbaix 1983) and on the other hand with regard to the distribution channel (Hisrich et al. 1972). Arising from these differences, researchers mainly agree that perceived risk is a multidimensional construct (Derbaix 1983; Mitchell 1999). Early investigations show that overall risk can be defined by several risk types depending on product type, such as financial, performance, physical, psychological, and social risk (Jacoby and Kaplan 1972; Kaplan et al. 1974). Over time many new risk types have been added, such as time/convenience risk (Stone and Grønhaug 1993) and privacy/data risk (Smith et al. 1996; Lingenfelder 2001; Malhotra et al. 2004), which also consider the shopping channels. However, there are no universal definitions for the types of risk, so different names frequently appear but address the identical risk. Besides the problem that risk types are therefore not easily comparable across studies, they are also not necessarily unrelated among each other (e.g., Stone and Grønhaug 1993; Liljander et al. 2009).

Regarding the medicines purchase in BMPs and in OPs, which captures on the one hand a specific type of good that addresses naturally health risks, and on the other hand a purchasing environment with a specific product presentation type, both can arise the feeling of uncertainty and risk-taking. As well the goods and the environment can be a barrier to the purchase. Following the study conducted in the sales rooms of BMPs (Ersöz and Schröder 2022), we define the relevant types of risk in Table 1.

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[1] This chapter is a revised and advanced version of the publication "Ersöz, Semra/Schröder, Hendrik (2022). Presenting OTC Drugs on Digital Signage: Effects on the Perceived Purchase Risk. In: Manfred Bruhn/Karsten Hadwich (Eds.). Forum Dienstleistungsmanagement. Kundenperspektive – Mitarbeiterperspektive – Rechtsperspektive. Springer, 529–555."

TABLE 1: RISK TYPES WITH DEFINITIONS

Risk Type	Definition
Performance Risk	Wrong purchase decision due to the characteristics of the product presentation (adjusted from Jacoby and Kaplan 1972).
Physical Risk	Damage to health or discomfort caused by the product or the product presentation technique (Stone and Grønhaug 1993).
Psychological	Unsuitability of the product in comparison to the image or self-concept (Jacoby and Kaplan 1972).
Financial	Money loss due to the purchase (Cunningham 1967; Jacoby and Kaplan 1972).
Social	Rejection by others due to the choice of the shopping location (Stone and Grønhaug 1993).
Privacy	Disclosure of personal data to third parties (Malhotra et al. 2004).

LITERATURE REVIEW

Ample research has been conducted on relevant platforms such as EBSCOhost, Emerald Insight, ScienceDirect, SpringerLink, wiso, EconBiz and Scopus, Google Scholar, and Web of Science.

The first finding is that research on risks associated with medicines is predominantly concentrated on health issues; rarely customers' experiences during the purchase of medicines have been investigated.

For customer reactions to in-store DSDs existing research concentrates on the location of the displays, the type of advertising, the length of text messages, effects on retail atmospherics, and e.g., the given attention by customers (e.g., Burke 2009; Dennis et al. 2010; van de Sanden et al. 2020). These findings are hardly transferrable to the special case of pharmacies and drug presentations since the use of DSD, the type of retail, and the investigated topics are different.

Studies on perceived risk for medicine purchase address generic drugs (Rozano Suplet et al. 2009; Jharap 2017; Abzakh et al. 2013), health services (Ashford et al. 2000), and differences between the purchase in BMPs and supermarkets (Mortimer et al. 2019; Mortimer 2018). The findings of these studies are focused on relevant risk types that influence the shopping situation and purchase decision.

Regarding OPs, the effects of perceived risk on OP adoption have been studied in many other countries, predominantly using the Technology Acceptance Model and examining a few other constructs, such as trust, performance, usability, etc. (Büttner et al. 2006; Büttner and Göritz 2008; Yin et al. 2016; Ma 2021; Sabbir et al. 2021; Santos 2021). The results of the studies are not always clear-cut, with some concluding that perceived risk influences purchase intention (e.g., Yin et al. 2016), and others explaining mediator variables, such as trust, for the effect between perceived risk and purchase intention (e.g., Büttner and Göritz 2008; Ma 2021). Related studies are provided as an overview in Annex 1.

THE ROLE OF PERSONALITY TRAITS AND FAMILIARITY IN RISK PERCEPTION

Personality traits can be defined as relatively stable, consistent, and enduring internal characteristics derived from a pattern of a person's behaviors, attitudes, feelings, and habits (Allport 1937). According to Allport (1937), various traits exist to a varying degree in every individual and the unique decision process and behavioral tendencies are shaped by the interaction of these traits. There are different understandings of personality traits, but many scientists agree that they can be used to distinguish individuals from others (e.g., Brody and Cunningham 1968; Li 2017).

Against the background of risk, it is observable in daily life that people differ considerably in their risk assessments and decision-making in risky situations (Siegrist et al. 2005). The readiness to take risks in this context is a self-explanatory personality trait to understand why some people tend to encounter risky situations more than others, which can help to explain risk perception and behavioral intentions (Nicholson et al. 2005; Zuckerman 2007; Kam 2012).

Besides that, another personality trait to understand differences in risky decision-making between persons has shown to be the disposition to trust (e.g., Koller 1988; Sjöberg 2001; Siegrist et al. 2005). Some people tend to trust more than others, and the willingness to make oneself vulnerable to a third party, i.e., to rely on others, can be defined as interpersonal trust, which is included in the disposition to trust. (McKnight et al. 2004). In the early stages of a relationship, people generally rely on their disposition to trust, since they have little information by which to judge the other party (McKnight et al. 1998). However, this personality trait is not static but develops throughout life as people encounter other people and situations (Mayer et al. 1995).

This also highlights the role of familiarity with a person or situation as a parameter that can influence judgments and behavioral tendencies. Familiarity has the ability to directly influence risk perceptions and behavioral intentions (e.g., Koller 1988; Wang and Emurian 2005). This is also shown in the context of pharmacy adoption (e.g., Santos 2021; Mortimer et al. 2019).

In this study, we will use the explained personality traits and familiarity with the purchase situations as control variables to a) examine their impact on risk perceptions and purchase intention and b) adjust for these personality- and knowledge-based differences when comparing the three purchasing conditions.

HYPOTHESIS DEVELOPMENT

Reaching back to the situation of purchasing OTC drugs in pharmacies, we consider for the hypothesis development the characteristics of the pre-purchase situation for medicines in digital and non-digital environments.

During the evaluation of products, customers regularly consider the products' properties, functions, and usage in the background of their shopping goals. Evaluations are based on prior experiences and the perceived information in the shopping situation (Dowling 1986; Dowling and Staelin 1994). In the case of medicines, many properties can only be assessed after use, if at all. For this reason, medicines are to be regarded as intangible goods, particularly, in the pre-purchase phase (Benkenstein 2008).

General intangibility refers to the customer's difficulty in accurately describing and specifying a product (Laroche et al. 2004). It is shown that with increasing intangibility perceived purchase risks increase (Laroche et al. 2004; Nepomuceno et al. 2014). Mental intangibilities, which refer to cognitively perceivable characteristics, have been shown to have a stronger influence on perceived risks than physical intangibilities, which refer to characteristics perceivable by the bodily senses. Perceived risk can be lowered by increasing mental tangibility more than by increasing physical tangibility (Laroche et al. 2004). Interestingly, for the purchase of goods from the internet intangibility plays a minor role in perceived risk (Eggert 2006).

For the case of medicine purchase, we assume that intangibility pays in particular on performance, physical, and psychological risks, since these risk types address the risks that arise from perceived information and perceived product properties that also depend on the product presentation.

For performance risk, results of the investigation in BMPs show a lower risk perception in BMPs with a DSD compared to those with a CD (Ersöz and Schröder). This finding suggests that the absence of physical products could be compensated through the product's digital presentation.

Since in both environments, BMPs with a DSD and OPs, the products are presented as images, the difference between the pre-purchase situations is that in BMPs customers cannot interact with the presentations autonomously, they can retrieve only the presented information. In contrast, in OPs, they can interact with the product and retrieve easily more information. This may increase the mental tangibility of the products in OPs. Under these considerations, we hypothesize:

H1A: Customers perceive the *performance risk* to be *lower* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in a BMP with a *CD*.

H1B: Customers perceive the *performance risk* to be *higher* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP.*

Physical risk in shopping situations, when exploring the products with the eyes, can be described as occurring physical complaints, such as dizziness or eye pain. Ersöz and Schröder's study (2022) shows that perceived physical risk is lower in BMPs with a DSD than in BMPs with a CD. Furthermore, in OPs customers have more control over websites' settings, such as font and image size, and the number of products. They can reduce possible physical complaints autonomously. Subsequently, we hypothesize:

H2A: Customers perceive the *physical risk* to be *lower* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in a BMP with a *CD*.

H2B: Customers perceive the *physical risk* to be *higher* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP*.

Moving on with the psychological risk, which is associated with the concern to buy an unfitting product. The recognition of products thereby can highly depend on customers' prior experiences, expectations, and perceptions (Jayawardhena et al. 2007; Rains and Donnerstein Karmikel 2009; Laroche et al. 2005). However, studies have shown that the evaluation of products is not solely based on absolute levels or values of the properties, customers can also evaluate the discrepancy between the expectations for the product and the perceived attributes (Campbell and Goodstein 2001). Today, many customers are well used to online shopping environments and use them very frequently. When the psychological risk for BMPs with a DSD is evaluated regarding the presentation's similarities with OPs, we suggest that BMPs with a DSD are perceived as indifferent in psychological risk compared to OPs, but according to Ersöz and Schröder's findings (2022) less risky compared to BMPs that have CDs.

H3A: Customers perceive the *psychological risk* to be *lower* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in a BMP with a *CD*.

H3B: Customers perceive the *psychological risk* to be *equal* when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP.*

Price consciousness is an essential factor in decision-making (Ju and Lee 2017), and pharmacy customers are interested in buying lower-cost OTC drugs with the same medical effect (Ricks and Mardanov 2012). The possibility to compare prices is on the internet even higher than in retail, this can decrease perceived financial risk (Bezes 2016). Furthermore, OPs are known for their cheap prices (Wieringa et al. 2015; Tebroke 2019). When purchasing medications in BMPs with CDs compared to those with DSDs, customers do not have to expect BMPs to lower or raise prices quickly as products usually have price tags and this would be labor-intensive. In contrast, prices on DSDs can be changed in a short time. Consequently, we assume:

H4A: Customers perceive the *financial risk* to be higher when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in a BMP with a *CD*.

H4B: Customers perceive the *financial risk* to be higher when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP*.

When purchasing medicines in BMPs, customers can identify themselves with the BMP's values and traditions. The change from shopping in traditional BMPs to modern digitalized BMPs can mean that customers identify with this quite new store image and therefore make their purchases there. Depending on the values of their social groups, these may or may not approve of the change (e.g., Escalas and Bettman 2005; Woodruffe-Burton and Wakenshaw 2011; He et al. 2012). In the case of buying medicines in supermarkets, the social risk was heightened (Mortimer et al. 2019). Studies for online shopping show contrary results, social risk is perceived to be lower than in physical stores (Eggert 2006). Therefore, we assume:

H5A: Customers perceive the social risk to be higher when purchasing OTC medicines in a BMP with a *DSD*compared to purchasing in a BMP with a *CD*.

H5B: Customers perceive the social risk to be higher when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP*.

In BMPs the magnified product presentation by the DSD can enable other customers to see more clearly the products on which another customer is advised and also which products they buy. Consequently, personal data is more likely to be passed on to other customers than in the case of consultation in front of a CD. The customer who is advised in a pharmacy with a DSD can be unsure whether and to what extent their state of health is accessible to other customers in the sales room. Considering online shopping, the privacy risk is known to be of great significance for customers (e.g., Miyazaki and Fernandez 2001). Compared to shopping in retail stores, customers are more concerned that third parties can get easily access their personal data (Eggert 2006). Therefore, we hypothesize:

H6A: Customers perceive the privacy risk to be higher when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in a BMP with a *CD*.

H6B: Customers perceive the privacy risk to be lower when purchasing OTC drugs in a BMP with a *DSD* compared to purchasing in an *OP*.

Moreover, we assume that the selected risk types form the overall perceived risk for shopping for OTC medication in digitalized and non-digitalized pharmacies, therefore we hypothesize for all three presentation types:

H7: Performance, psychological, physical, privacy, financial, and social risk types will significantly contribute to the perceived overall risk.

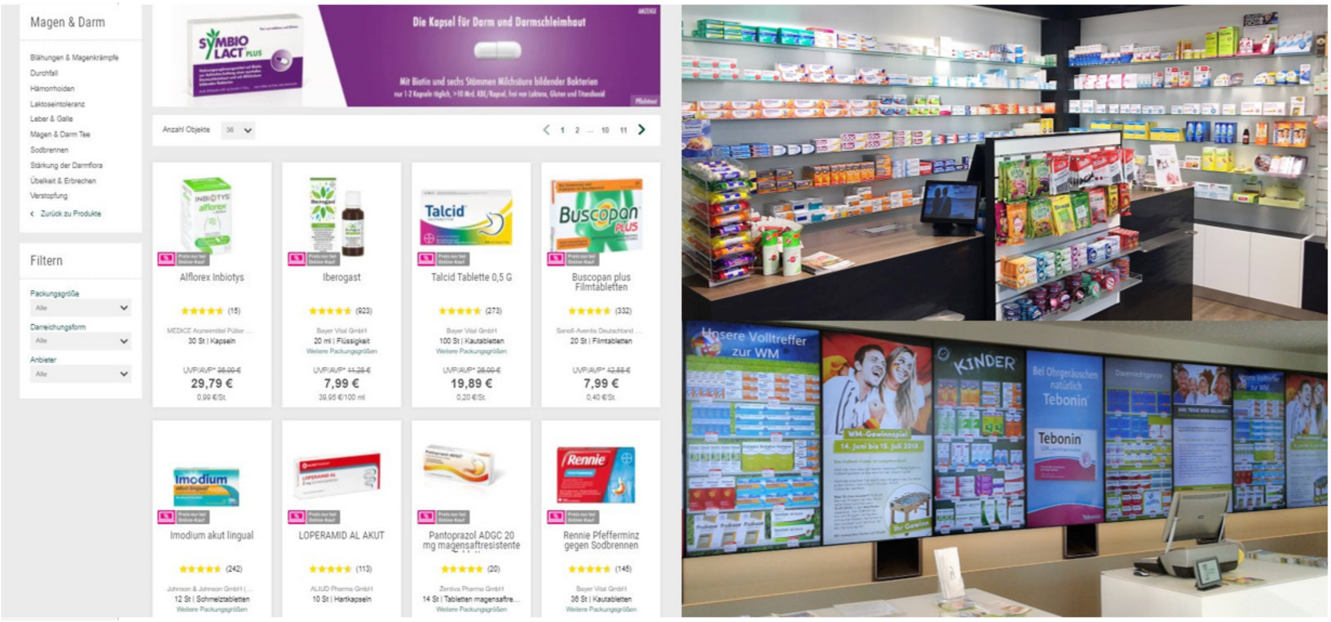
Referring to the concept of perceived purchase risk (Bauer 1960), which states that perceived risk can lead to the cancelation of the purchase process, we assume that perceived purchase risk can lower the purchase intention. This is why we place the following hypothesis for all three purchase conditions:

H8: The greater the *overall risk* the lower the *purchase intention*.

METHOD

STIMULI AND STUDY DESIGN

In an online survey, designed as a within-subjects design, three types of pharmacies to be a BMP with conventional displays, a BMP with digital signage displays, and an online pharmacy website, were investigated regarding customers' perceived risk for the defined risk types (see Chapter 2.1). The perceived risk scale was adapted from (Ersöz and Schröder 2022). We introduced the survey with "Imagine you want to purchase a non-prescription drug from the pharmacy section shown" and showed one of the pharmacy images to be evaluated (see Figure 1). The statements were asked twice, once for uncertainty ("How likely do you think it is that the consequences listed here will occur?") and once for negative purchase effect ("How annoying do you consider then the occurrence of the consequences listed here?"). The statements were fully randomized for each presentation type within the uncertainty and negative effect ratings and the sequence of uncertainty and negative effect evaluations. Additionally, we questioned participants' perceived overall risk, purchase intention, purchase behavior, and demographics. Further, the control variables, interpersonal trust (Beierlein et al. 2014), readiness to take risks (adapted to the pharmacy context from Beierlein et al. 2015), and familiarity with pharmacies (BMPs in general, BMPs with DSD, OPs) have been surveyed. All scales were assessed on a 7-point scale, except the purchase behavior and demographics. The OR was questioned with a global item for each condition with "Overall, I consider the risk of purchasing non-prescription drugs to be…" to be answered on a 7-point scale with 1 = very low, 2 = low, 4 = moderate, 6 = high, and 7 = very high.


Magen & Darm
Filtern
Die Kapsel für Darm und Darmschleimhaut
Alflorex Inbiotys
Iberogast
Talcid Tablette 0,5 G
Buscopan plus Filmtabletten
29,79 €
7,99 €
19,89 €
7,99 €
Imodium akut lingual
LOPERAMID AL AKUT
Pantoprazol ADGC 20 mg magensaftresistente
Rennie Pfefferminz gegen Sodbrennen
Unsere Volltreffer zur WM
KINDER
Teboin

(Note: from left to right: OP (Source: www.Docmorris.de), right on top: BMP with a CD (Source: own photos), right at the bottom: BMP with a DSD (Source: own photos))

FIG. 1: IMAGES OF PHARMACIES

SAMPLE

219 German-speaking participants were recruited through link sharing on social media platforms (Facebook, Instagram) to fill out the online survey. Convenience sampling was used to select the participants, which is an efficient and acceptable sampling method to adopt for online shopping, as demonstrated in previous studies (e.g., Park and Kim 2003; Carlson and O'Cass 2010; Kumar et al. 2020). The study took place in August and September 2021. 219 subjects participated, 87 of the data sets needed to be filtered out because participants either did not complete the survey or did not answer the attention check correctly (which was a statement hidden somewhere between the scales in which they were asked to click "4"). As a result, a final sample size of n = 132 participants is included for further data analyses. Thus, for the three presentation manipulations, we had a total of 396 valid responses. Average age was M = 27.5 years (SD = 8.39 years, Min = 16, Max = 61). Gender distribution was not entirely balanced, with 68% of participants being female (30% male and 2% non-binary).

Most of the participants were students (66%), followed by a smaller amount being employed (29%), self-employed (2%), other (2%), such as parental leave, and one participant was retired (1%). The majority of the participants were single (80%), followed by married (18%), other (2%), and divorced (1%). Most of the participants had a monthly net income of fewer than 1000 Euros (56%), a much smaller group of around 2000 Euros (23%), followed by around 2500 Euros (12%). For a more detailed overview of the demographic data, see Table 3.

The interpersonal trust towards pharmacies was rated above the scale's average with M = 3.72 (SD = .63), while the readiness to take risks was slightly below the scale's average M = 2.85 (SD = 1.47). Familiarity with BMPs in general was pretty high with M = 5.50 (SD = 1.59) in contrast to BMPS with a DSD M = 3.02 (SD = 2.25) rated as moderate, and online pharmacies with M = 3.43 (SD = 2.08) rated slightly above scales average.

TABLE 3: DEMOGRAPHICS AND PURCHASE BEHAVIOR OF THE SAMPLE

	n	%
Gender		
female	90	68
male	40	30
non-binary	2	2
Marital Status		
single	105	80
married	23	18
divorced	1	1
other	2	2
Highest educational level		
no degree	1	1
Middle School or Apprenticeship	15	11
High school or College	41	31
University/Postgraduate degree	75	57
Employment		
Student	86	66
Employed	38	29
Self-Employed	3	2
Retired	1	1
other	3	2
Income (net monthly)		
< 1000 EUR	65	56
~ 2000 EUR	27	23
~ 2500 EUR	14	12
~ 3000 EUR	7	6
> 3500 EUR	3	3
Age		
16 - 25	73	56
26 - 39	45	34
40 - 55	9	7
> 55	4	3
Purchase Behavior		
Frequency of Shopping in BMPs		
not at all	8	6
infrequent	21	16
1-2 times in a year	40	30
every 3 months	55	42
several times per month	8	6
Frequency of Visits in BMPs (e.g., to obtain information)		
not at all	35	26
infrequent	50	38
1-2 times in a year	27	21
every 3 months	16	12
several times per month	4	3

	n	%
Frequency of Shopping in OPs		
not at all	58	44
infrequent	32	24
1-2 times in a year	28	21
every 3 months	14	11
several times per month	0	0
Frequency of Use of OPs (e.g., to obtain information)		
not at all	49	37
infrequent	33	25
1-2 times in a year	27	21
every 3 months	21	16
several times per month	2	1

DATA PRE-PROCESSING[2]

The two components of the perceived risk construct (uncertainty and negative purchase effect) have to be linked to estimate the perceived risk. Two methods exist to achieve this: the summative and the multiplicative linking (Mitchell 1999). We decided to use the latter because it follows the principle of diminishing sensitivity. According to this central principle of Kahnemann and Tversky's Prospect Theory (1979), the relative increase in probability is more meaningful than the absolute increase (Kahneman and Tversky 1979). To exemplify, an increase of 1 to 2 % looms larger than an increase from 11 to 12 %. Using the summative linking instead of this logarithmic model would therefore imply disregarding well-established scientific knowledge and common sense (Wolff et al. 2019).

$$RI_i = \sum_{n=1}^{l} U_{ip} \text{ X } P_{ip}$$

RI = Perceived Risk of Statement i
U = Uncertainty of Purchase Effect
P = Negative Purchase Effect
n = Person (1, ..., l)

FIG. 2: ESTIMATION MODEL FOR PERCEIVED RISK PER STATEMENT

Furthermore, the statements were aggregated according to their assigned risk type, to estimate the risk types and their extent of perceived risk.

$$RA_j = \left(\sum_{i=1}^{m} RI_i \right) \div M_j$$

j = Risk type
RA_j = Perceived Risk of j
M_j = Number of Statements belonging to j
RI = Perceived Risk of Statement i

FIG. 3: ESTIMATION OF PERCEIVED RISK PER RISK TYPE

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[2] This chapter is a revised and advanced version of the publication "Ersöz, Semra/Schröder, Hendrik (2022). Presenting OTC Drugs on Digital Signage: Effects on the Perceived Purchase Risk. In: Manfred Bruhn/Karsten Hadwich (Eds.). Forum Dienstleistungsmanagement. Kundenperspektive – Mitarbeiterperspektive – Rechtsperspektive. Springer, 529–555."

To demonstrate the case of no risk, the values for the answers 1 to 7 were rescaled to 0 to 6 before we processed the data as above. If one of the two values for the uncertainty or the negative purchase effect is then rated “0”, there is no perceived purchase risk. For all other cases, risk levels 1 to 5 were formed, respectively the upper limits of risk levels to be the squares of the values from 2 to 6 (table 2).

TABLE 2: DEFINITION OF RISK LEVELS

Risk Values	0	> 0 - 4	> 4 - 9	> 9 - 16	>16 - 25	>25 - 36
Risk Level	0 no risk	1 very low risk	2 low risk	3 moderate risk	4 high risk	5 very high risk

RESULTS

HYPOTHESES TESTING

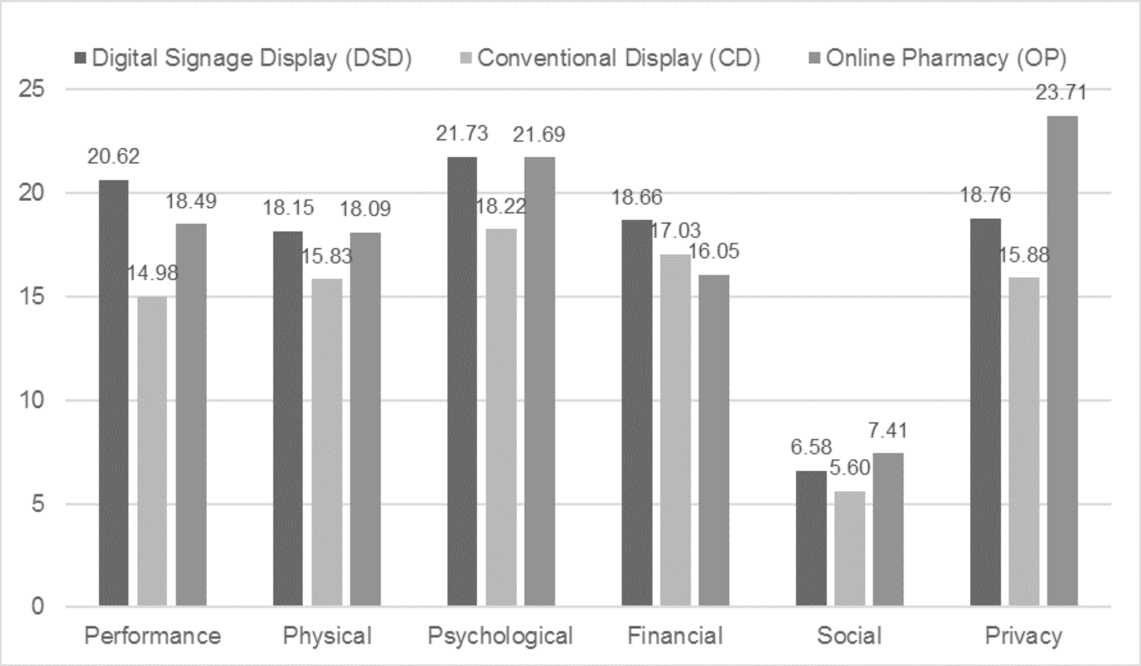
Hypotheses 1 - 6

We analyzed the data for differences between presentation types by controlling for the personal traits, as well the familiarities via repeated measures Analysis of Covariance (rmANCOVA). The assumptions for ANCOVA (normality, homogeneity of variance, and random independent samples) were checked and met by the data.

TABLE 4: RESULTS OF rmANCOVA (Note: Significance levels *p < .05; **p < .001)

Risk type	**Main Effects**	
	F (2, 125)	**η^2**
Performance	19.12**	0.234
Physical	7.50**	0.107
Psychological	15.19**	0.196
Financial	5.64*	0.083
Social	3.97*	0.060
Privacy	27.87**	0.308

The first analysis results show significant differences through all risk types to be evident in the three compared conditions (Table 4). The effect size η^2 can be interpreted as $\eta^2 = .01$ small, $\eta^2 = .06$ medium, and $\eta^2 = .14$ large effect, based on Cohen’s thresholds (Cohen 1988).



(Note: Values > 4 and ≤ 9 stand for “low risk”, values > 9 and ≤ 16 stand for “moderate risk”, and values > 16 and ≤ 25 stand for “high risk”)

FIG. 4: MEAN VALUES (ADJUSTED WITH CONTROL VARIABLES) OF PERCEIVED RISK PER RISK TYPE FOR BMPS WITH A DSD AND A CD AND OPS (STUDY 2)

To reveal the differences between the purchase conditions, i.e. presentation types, we conducted post hoc tests with Sidak adjusting. The mean values are controlled for biases by adjusting with control variables as covariates. An overview of the adjusted mean values shows Figure 4.

For **performance risk**, there is a difference between BMPs with a DSD and BMPs with a CD ($p < 0.001$). The difference indicates a higher perception of performance risk for BMPs with a DSD ($M = 20.62$, $SD = 10.81$) perceived at a high level compared to BMPs with a CD ($M = 14.98$, $SD = 8.73$), perceived at a moderate level. This result rejects Hypothesis H_{1A}. Hypothesis H_{1B} is also rejected because no significant differences were detected between BMPs with a DSD and OPs. Analyzing the covariates’ effects (see Table 6), we can report a relevance for BMPs with a DSD of *familiarity with BMPs* with an increasing effect ($\beta = 1.78$, $p = .007$), and *familiarity with OPs* with a decreasing effect ($\beta = -0.997$, $p = 0.039$) on the perceived performance risk. For OPs, *interpersonal trust* has an increasing effect ($\beta = 2.05$, $p = .008$), and *familiarity with OPs* has a decreasing effect on performance risk perception ($\beta = -0.872$, $p = .045$).

In **physical risk perception**, the results show solely a difference for BMPs with a DSD compared to those with a CD ($p < .001$), to be higher for BMPs with a DSD. The physical risk was perceived at a high level for BMPs with a DSD ($M = 18.15$, $SD = 9.25$) and at a moderate level for those with a CD ($M = 15.83$, $SD = 8.73$). Hypotheses H_{2A} and H_{2B} have to be rejected.

The covariate *interpersonal trust* shows significant effects on this risk type. It decreases the physical risk perception in BMPs with a CD ($\beta = -1.57$, $p = .015$).

Comparing **psychological risk** for the three conditions reveals also solely a difference between BMPs with a DSD and BMPs with a CD ($p < .001$). For this risk type, the perception was higher for BMPs with a DSD ($M = 21.73$, $SD = 9.98$) than for those with a CD ($M = 18.22$, $SD = 9.06$) within a high-risk level. This result rejects hypothesis H_{3A} but supports Hypotheses H_{3B} since there is no significant difference between BMPs with a DSD and OPs.

As relevant covariate *familiarity with BMPs* is identified with an increasing effect for the purchase in BMPs with a DSD ($\beta = 1.473$, $p = .016$) and the purchase in OPs ($\beta = 1.539$, $p = .010$).

For **financial risk**, there are differences between BMPs with a DSD and those with a CD (p = .049), and OPs (p = .007) as well. The financial risk is perceived for all conditions at a high level with M = 18.66 (SD = 8.99) for BMPs with a DSD, M = 17.03 (SD = 8.47) for those with a CD, and M = 16.05 (SD = 9.26) for OPs, but highest for BMPs with a DSD (see Figure 4). These outcomes support our hypotheses H_{4A} and H_{4B}.

For this risk type, the *readiness to take risks* as a control variable shows significant positive effects for the purchase in BMPs with a DSD (β = 1.37, p = .011), likewise, *familiarity with BMPs* has an increasing effect on OPs (β = 1.39, p = .012).

Testing for differences in **social risk** perception results in no differences in the comparison of BMPs with a DSD vs. BMPs with CD, and vs. OPs. The social risk is perceived on a low level for all conditions: M = 6.58 (SD = 6.86) for BMPs with a DSD, M = 5.60 (SD = 7.86) for those with a CD, and M = 7.41 (SD = 8.84) for OPs. The significant main effect of the ANCOVA is due to significant differences between BMPs with a CD and OPs (p = .036). Hypotheses H_{5A} and H_{5B} are rejected.

The analyses of covariates show that *readiness to take risks* increases the social risk perception when purchasing in BMPs with a DSD (β = 1.02, p = .014), with a CD (β = 1.12, p = .015), and in OPs (β = 1.35, p = .013). In contrast, *interpersonal trust* has a decreasing effect on the purchase in BMPs with a CD (β = -1.46, p = .014) while *Familiarity with BMPs* shows decreasing effects in BMPs with a DSD (β = -1.04, p = .003) and in those with a CD (β = -1.04, p = .011) for social risk perception.

At least, for **privacy risk**, the post hoc test reveals differences for BMPs with a DSD compared to those with a CD (p < .001) and also compared to OPs (p < .001). The privacy risk is perceived at high levels in OPs (M = 23.71, SD = 12.61) and in BMPs with a DSD (M = 18.76, SD = 11.03). In BMPs with a CD, the perceived privacy risk is at a moderate level (M = 15.88, SD = 10.36). The privacy risk is perceived as higher in BMPs with a DSD than in those with a CD, but highest in OPs. These results support our hypotheses H_{6A} and H_{6B}.

Relevant effects are detected for the control variable *familiarity with OPs* when purchasing in OPs (β = -1.62, p = .004) with a decreasing effect and for *familiarity with BMPs* (β = 1.98, p = .009) with a risk perception increasing effect.

TABLE 5: HYPOTHESES 1 - 6 TESTS RESULTS

Risk type	**Hypothesis DSD vs. CD**			**Hypothesis DSD vs. OP**		
	Direction		**Result**	**Direction**		**Result**
Performance	H1A	DSD < CD	x	H1B	DSD > OP	x
Physical	H2A	DSD < CD	x	H2B	DSD > OP	x
Psychological	H3A	DSD < CD	x	H3B	DSD = OP	✓
Financial	H4A	DSD > CD	✓	H4B	DSD > OP	✓
Social	H5A	DSD > CD	x	H5B	DSD > OP	x
Privacy	H6A	DSD > CD	✓	H6B	DSD < OP	✓

TABLE 6: SIGNIFICANT EFFECTS OF THE CONTROL VARIABLES ON THE RISK TYPES

Risk Type / **Control Variable**	**Performance**			**Physical**			**Psychological**			**Financial**			**Social**			**Privacy**		
	DSD	CD	OP	DSD	CD	OP	DSD	CD	OP	DSD	CD	OP	DSD	CD	OP	DSD	CD	OP
Readiness to take risks													↑	↑	↑			
Interpersonal trust			↑		↓					↑				↓				
Familiarity with BMPs in general	↑						↑		↑			↑	↓	↓				↑
Familiarity with BMPs with a DSD																		
Familiarity with OPs	↓		↓															↓

(Note: ↑ symbols a positive effect, ↓ symbols a negative effect; significance level of 0.05)

Hypotheses 7 and 8

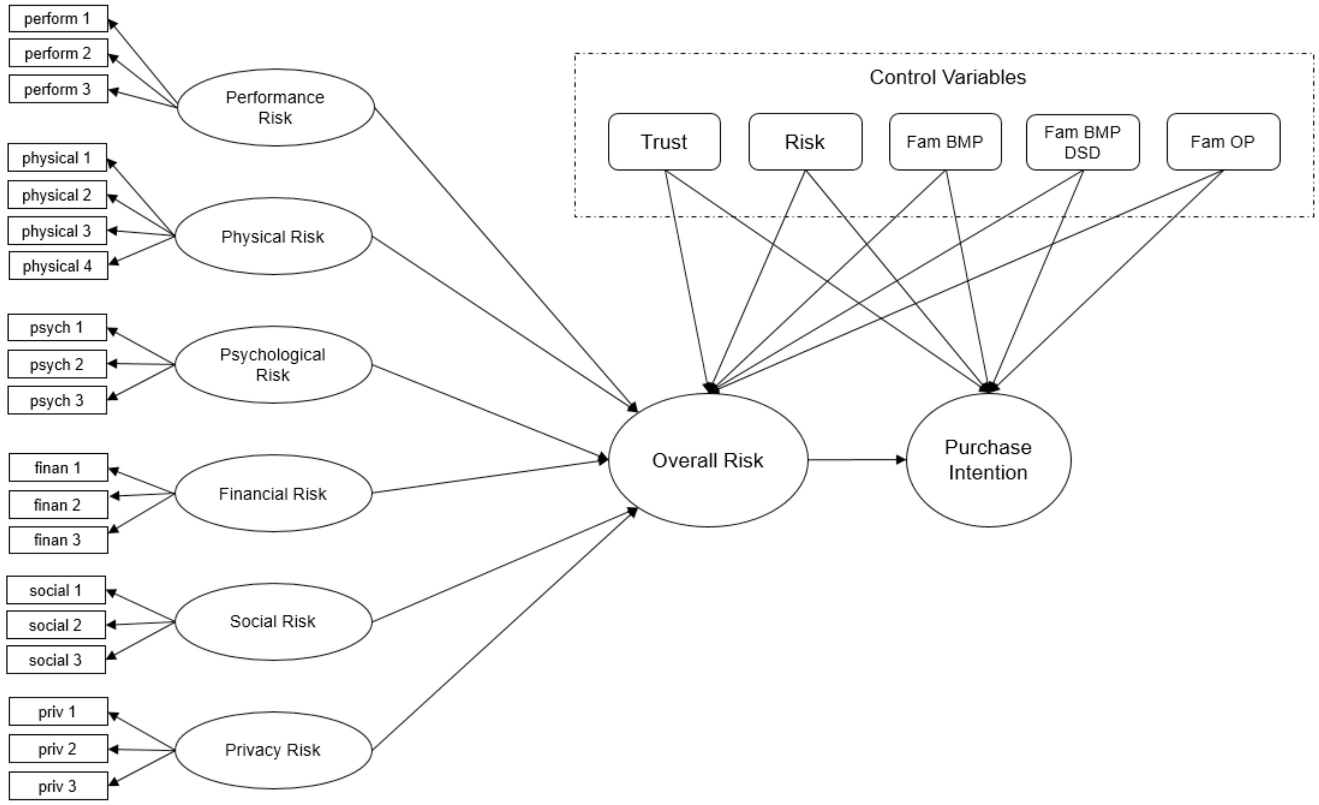
Having tested the differences between presentation types, we are further interested in testing Hypothesis 7 about the contribution of the risk types on overall perceived risk (OR) and hypothesis 8 about ORs influence on purchase intention (PI).

For this purpose, we use Partial Least Squares Structural Equation Modeling (PLS-SEM), which is a variance-based path modeling, since this method is more suitable for early-stage research and can deal with hierarchical models as it is in the case of risk types and overall risk (Hair et al. 2018) compared to the widely used Covariance Based Structural Equation Modeling (CB-SEM). The difference between the two methods is that covariance-based estimators minimize the discrepancy between the empirical and model-implied variance-covariance matrix of the observable indicators to estimate the model parameters, whereas variance-based estimators estimate linear combinations of the indicators as proxies for the theoretical concepts (Benitez et al. 2020).

Our research model (see Figure 5) is built from reflective measurements for the risk types, the PI, and the control variables. The risk types are meant to formatively form the OR (hypothesis 7). They can be regarded as ingredients from which OR is built, which influences PI (hypothesis 8). The model's estimation was computed for each purchase condition.

First, we computed the PLS algorithm and subsequently applied the bootstrap method to estimate the relationships among constructs. PLS-SEM estimates reflective measurement models with Mode A (correlations weights). To estimate the algorithm estimation, the following parameters were set: 300 iterations, stop criterion 10-7, and replacing the missing values with the average values. To test the significance of the path coefficients, the bias-corrected and accelerated (BCa) bootstrapping procedure was applied with 5000 samples and a two-tailed significance level of 0.05 (Hair et al., 2017).

The analysis of PLS-SEM is carried out in two stages, where the first stage includes the ascertainment of the used measures in terms of reliability and validity as preconditions to estimate the models. Then, in the second stage, the resultant model coefficients are interpreted.



(Abbr.: Trust = Interpersonal trust; Risk = Readiness to take risks; Fam = Familiarity)

FIG. 5: RESEARCH MODEL

Testing Preconditions

First, we assessed the *measurement models*.

Reflective measurement models require the estimation of the following quality criteria: composite reliability (Dijkstra–Henseler's ρ), discriminant validity via heterotrait-monotrait correlation ratio (HTMT), the average variance extracted (AVE), and factor loadings of the items.

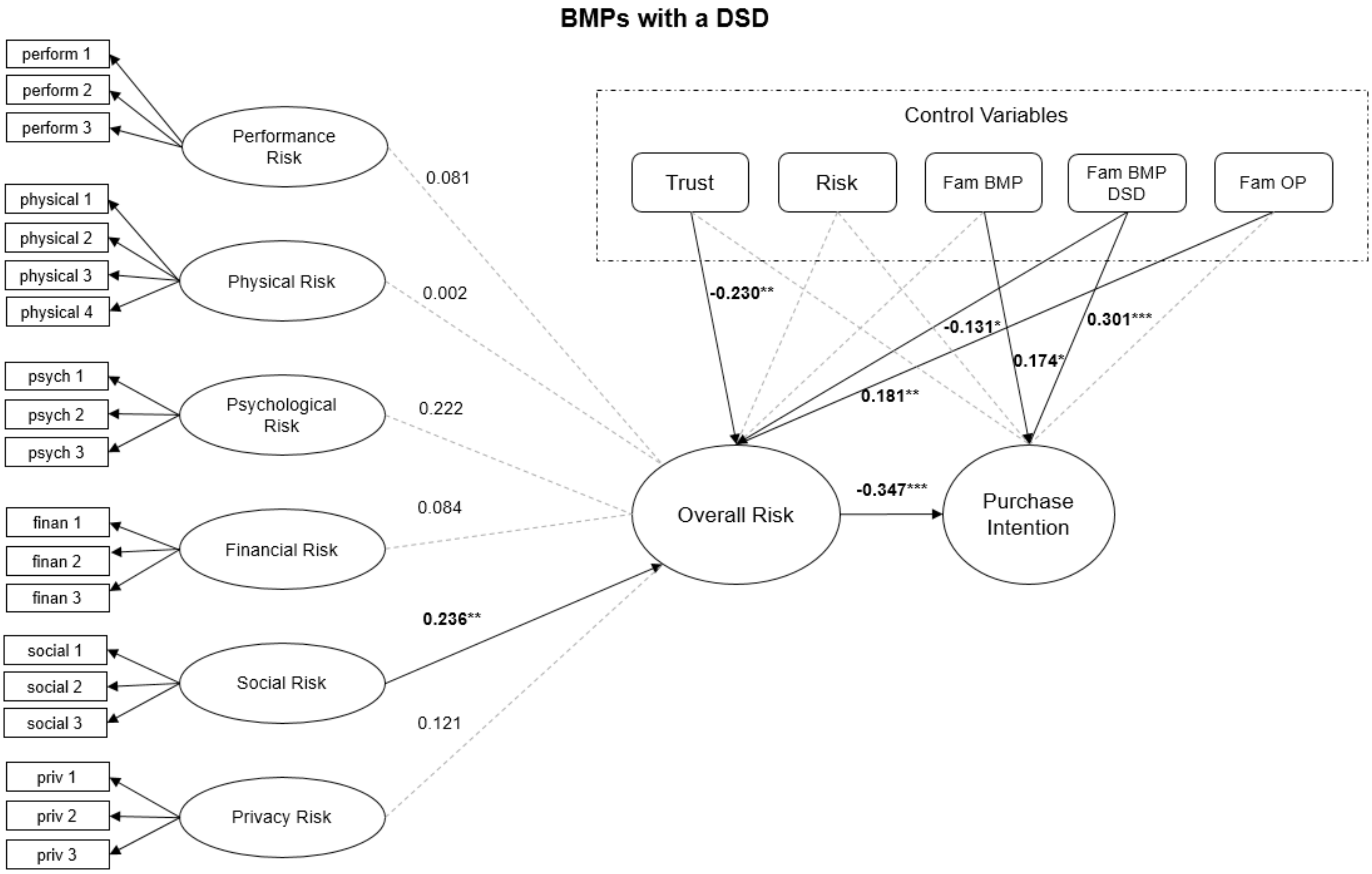
For composite reliability, Dijkstra–Henseler's ρ, which depicts the correlation between the latent variable and construct scores, larger than 0.707 was regarded as reasonable (Nunnally 1994). This value describes in addition to Cronbach's α the internal consistency of the constructs. Discriminant validity means that two latent variables that are theoretically meant to be different, differ also statistically sufficiently. If the HTMT value is below 0.90, discriminant validity has been established between two reflective constructs (Hair et al. 2017). The AVE, typically used to assess convergent validity, indicates to what extent the latent variable can explain the indicators' variance. An AVE larger than 0.5, has been suggested (Hair et al., 2017). Factor loadings indicate an indicator's reliability and should be greater than 0.707, interpreted as more than 50% of the variance in a single indicator can be explained by the corresponding latent variable (Hair et al. 2017).

The measurement model estimations meet the criteria Dijkstra–Henseler's $\rho > 0.707$, HTMT < 0.9, and AVE >0.5 completely. The loadings of two items of financial risk (finance 2 and 3) in the model for BMPs with a CD are slightly below the threshold of 0.707. Since both items meet the criteria in the other two estimated models for BMPS with a DSD and OPs, we see no reason to take steps.

Regarding the model-fit measures for PLS-SEM, so far, there is no suitable measure for overall fit (Benitez et al. 2020; Hair et al. 2019; Henseler et al. 2016).

Testing Hypotheses

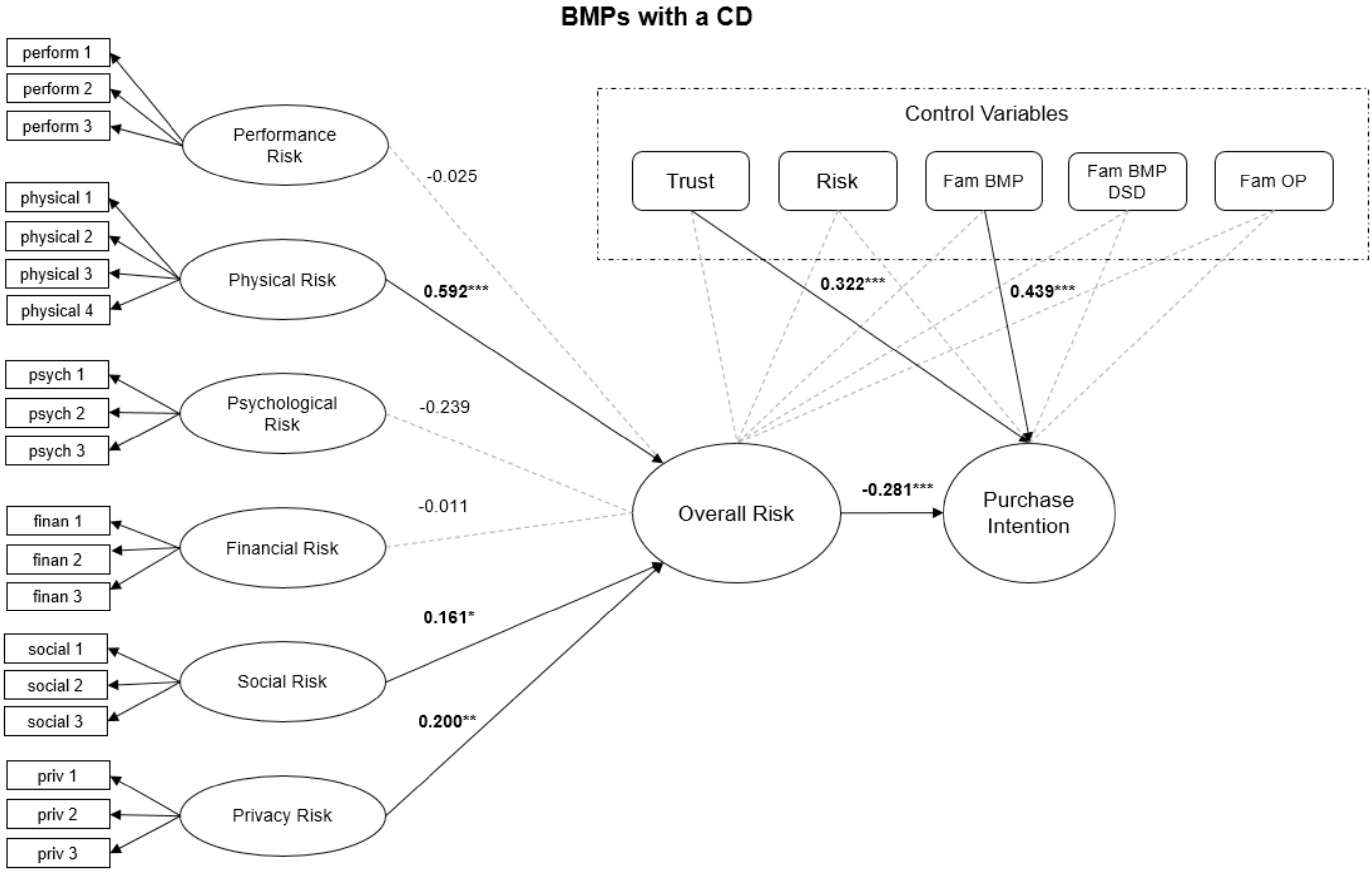
Second, to test the hypotheses, we computed the *structural models.*



(Note: Significance levels *p < .10, **p < .05; ***p < .001, insignificant paths are dashed lines)

FIG. 6: RESULTS OF SEM FOR BMPS WITH A DSD

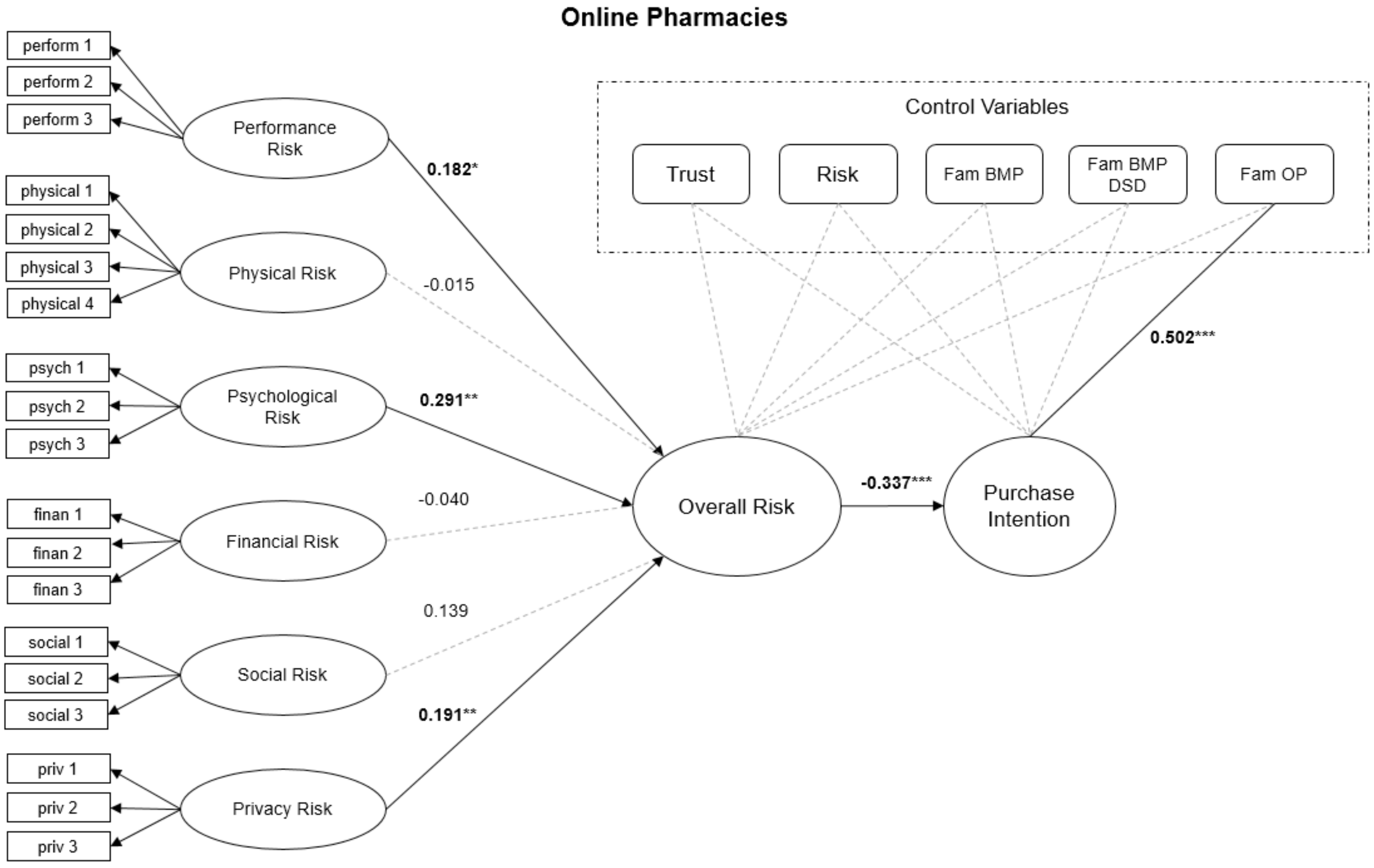
The estimated model for **BMPs with a DSD** shows a significantly positive relation between social risk and OR ($f^2 = .061$), and a significantly negative relation between OR and PI ($f^2 = .147$) (see Figure 6). Interpersonal trust has a negative effect on OR ($f^2 = .068$), as has familiarity with BMPs equipped with DSDs ($f^2 = .024$). In contrast, familiarity with OPs has a positive effect on OR ($f^2 = .044$). Familiarity with BMPs in general ($f^2 = .034$) and with those with DSDs ($f^2 = .121$) have a positive effect on PI. The f^2 values range from 0.02 to 0.149, 0.150 to 0.349, or larger or equal to 0.350, indicating weak, medium, or large effect size respectively (Cohen 1988). The degrees of variance as R^2 values for OR and PI are also calculated and result in $R^2 = .386$ (corrected $R^2 = .329$) for OR and in $R^2 = .303$ (corrected $R^2 = .269$) for PI.



(Note: Significance levels *p < .10, **p < .05; ***p < .001, insignificant paths are dashed lines)

FIG. 7: RESULTS OF SEM FOR BMPS WITH A CD

For **BMPs with a CD**, physical ($f^2 = .152$), social ($f^2 = .035$), and privacy ($f^2 = .052$) risk types are found significantly positively related to OR. OR is significantly negatively related to PI ($f^2 = .140$). The personality trait of interpersonal trust has a positive effect on PI ($f^2 = .169$), as has familiarity with BMPs ($f^2 = .303$), see Figure 7. R^2 values result in $R^2 = .370$ (corrected $R^2 = .312$) for OR, and $R^2 = .497$ (corrected $R^2 = .473$) for PI.



(Note: Significance levels *p < .10, **p < .05; ***p < .001, insignificant paths are dashed lines)

FIG. 8: RESULTS OF SEM FOR OPS

The results for **OPs** show significant positive relations between performance ($f^2 = .029$), psychological ($f^2 = .040$), and privacy ($f^2 = .039$) risk types and OR. As well, OR is significantly negatively related to PI ($f^2 = .180$). Familiarity with OPs has a positive impact on PI ($f^2 = .379$), see Figure 8. OR results in $R^2 = .299$ (corrected $R^2 = .235$) and PI in $R^2 = .426$ (corrected $R^2 = .398$).

From these results, it can be concluded that **hypothesis 7** has to be rejected because for each model tested, and thus each purchase condition, only some but not all risk types contribute to the OR.

Hypothesis 8, which states that the greater OR the lower PI, is supported by our estimated models for all three purchase conditions.

FURTHER ANALYSES

TABLE 7: PURCHASE INTENTION AND OVERALL RISK MEAN VALUES AND STANDARD DEVIATION (IN BRACKETS)

	DSD	CD	OP
OR	17.42 (6.67)	14.86 (5.99)	17.57 (6.48)
PI	4.94 (1.76)	6.17 (1.25)	4.55 (1.51)

(Note: For OR values > 9 and ≤ 16 stand for "moderate risk", and values > 16 and ≤ 25 stand for "high risk"; for PI value 1 stands for "I disagree", 4 stands for "moderately", and 7 for "I fully agree")

Furthermore, we are also interested in the magnitudes of PI and OR to gain a comparative perspective of customers' ratings on OR and PI. We, therefore, computed the mean values (see Table 7) and conducted rmANCOVAs with controlling for the consistently used control variables. The rmANCOVAs confirm significant differences in the OR, $F(2.125) = 26.62$, $p < .001$. $\eta^2 = .299$, and in the PI, $F(2.125) = 102.10$. $p < .001$. $\eta^2 = .620$ between the purchase conditions. The OR is rated at a high-risk level for BMPs with a DSD and OPs. BMPs with a CD were perceived as moderately risky. Post-hoc testing with Sidak adjusting signifies that for the purchase in BMPs with a DSD compared to those with a CD perceived OR is higher ($p < .001$). For PI between all conditions, the differences are found to be significant on a level of $p < .05$. The PI is highest for BMPs with CDs, followed by BMPs with a DSD, and lowest for OPs.

Furthermore, we analyzed how far the OR perception is associated with the PI among the three conditions by estimating Pearson's correlations. The PI in BMPs with a CD is positively correlated with the perceived OR in OPs ($r = .224$, $p = .01$).

DISCUSSION

SUMMARY OF THE MAIN FINDINGS

Given the study objective, we first developed hypotheses about product presentations for the three stages of pharmacy digitalization to compare perceived risk types in digitalized BMPs with a DSD with non-digitalized BMPs with a CD and with fully digitalized pharmacies, the OPs. To this end, we took a closer look at the type of products that are allowed to be presented in this sales area, defined as OTC drugs, and the product presentations' characteristics in the purchase conditions.

TABLE 8: OVERVIEW OF THE RESULTS

Tested Variable	Results DSD		Risk Levels		
			CD	OP	
Performance Risk	DSD > CD	DSD = OP	high	moderate	high
Physical Risk	DSD > CD	DSD = OP	high	moderate	high
Psychological Risk	DSD > CD	DSD = OP	high	high	high
Financial Risk	DSD > CD	DSD > OP	high	high	high
Social Risk	DSD = CD	DSD = OP	low	low	low
Privacy Risk	DSD > CD	DSD < OP	high	moderate	high
Overall Risk	DSD > CD	DSD = OP	high	moderate	high
Purchase Intention	DSD < CD	DSD > OP	-	-	-

The results revealed that in each purchase condition customers perceive each risk type (see Table 8, Risk Levels). For the digitalized pharmacies, to be 1) BMPs with a DSD and 2) OPs, the risk types performance, physical, psychological, financial, and privacy are perceived at high levels. The perceived overall risk is also considered high for both conditions. For non-digitalized BMPs with a CD, performance, physical, and privacy risks are perceived at a moderate level, whereas psychological and financial risks are perceived at a high level. For this purchase condition, the overall risk is classified as moderate. The social risk is perceived in all conditions at a low level.

The difference testing revealed significant differences in nearly every risk type between BMPs with a DSD and those with a CD (see Table 8, Results). Except for social risk, which is not perceived differently between the compared conditions, BMPs with a DSD score significantly higher on all risk types than BMPs with a CD. In terms of risks related to performance, physical health, and privacy, differences in OTC drug purchases are rated one risk level higher for BMPs with DSD than for BMPs with CD. Thus, our hypotheses for financial and privacy risks are supported by these findings.

In the comparison between BMPs with a DSD and OPs are significant differences found for financial risk, to be higher in BMPs with a DSD than in OPs, and for privacy risk, to be lower in BMPs with a DSD than in OPs. All in all, the types of risk are perceived at the same level in both conditions, which is generally high, except for social risk, which is low. The hypotheses established could be upheld for the risk types psychological, financial, and privacy.

To test the further hypotheses, we conducted a variance-based structural model estimation to compute the impact of risk types on overall risk and its influence on purchase intention. Results show that not every risk type impacts the perceived overall risk, only several risk types emerged to significantly contribute depending on the digitalization level of the pharmacy. Interestingly, solely social risk shows a significant influence on overall risk for BMPs with a DSD. This means that the judgment of the overall risk of purchasing OTC medications in a digitalized BMP depends on the fear of being rejected by the social reference group. For BMPs with a CD significant effects are found for physical, social, and privacy risk types. Interestingly, for this traditional purchase condition, the concern of being rejected by the social reference group is also significant for the evaluation of the overall risk. In addition, there is the fear of harm to health due to the product properties and discomfort with the purchase due to the product presentation, alongside the fear of disclosing data to third parties during the purchase. In OPs, performance, psychological, and privacy risks significantly contribute to overall risk. In fully digital pharmacy environments, customer concerns about making the wrong purchase decision based on product presentation, in addition to concerns about buying products that are inappropriate for the purpose and sharing data with third parties during the purchase, contribute significantly to the overall risk score.

The results show that financial risk does not contribute to the overall risk perception of customers in the types of pharmacies studied for the sale of OTC drugs. In addition, the results highlight the influence of social risk as a barrier to purchase in BMPs and particularly those using DSDs, as this type of risk is perceived at a low level but contributes to high overall perception of risk in these pharmacies. This suggests that social risk is particularly important in understanding customers’ purchase intentions in BMPs with DSDs, although the ratings do not show significant differences between the BMPs and BMPs with DSDs and OPs.

We also find that across all purchase conditions, the greater the perceived overall risk, the lower the purchase intention. In addition, we evaluated the magnitude of purchase intention and found that it is lowest for OPs and highest for BMPs with CD. Moreover, surprisingly, the overall risk in OPs is positively correlated with purchase intention in BMPs with CD, which could be interpreted as a factor promoting the purchase in BMPs with CD.

Besides, we estimated the coefficient of determination, R^2. In general, the R^2 values for the overall risks showed values around 0.3, which can be interpreted as a high predictive power of the risk types for the overall risk, when compared with consumer studies (Hair et al. 2017), as R^2 describes the proportion of explained variance in the overall risk by the exogenous latent variables as preliminary constructs. Scholars debate the magnitude of R^2 and largely agree that the value should be assessed in comparison to studies examining the same dependent variable (Benitez et al. 2020). In terms of theoretical background, there are many studies on perceived purchase risk, but as described in the theoretical framework, this construct is highly dependent on product type and distribution channel. Regarding related studies, either no R^2 were reported (e.g., Rozano Suplet et al. 2009) or studies considered perceived risk as an independent variable (e.g., Büttner et al. 2006; Yin et al. 2016; Mortimer 2018; Mortimer et al. 2019).

Further, the R^2 values for PI were consistently higher than those of OR, but we remain primarily interested in uncovering the significant impact of OR on PI.

All calculations were performed controlling for personality traits and experience-based variables that might influence ratings.

We controlled for interpersonal trust and readiness to take risks as personality traits. Increasing interpersonal trust was positively related to an increase in risk types in digitalized pharmacies, namely performance risk among OPs and financial risk among BMPs with a DSD. In contrast, interpersonal trust lowers physical and social risk perceptions in BMPs with CDs and overall risk in BMPs with DSDs. Moreover, increasing interpersonal trust increases purchase intention in BMPs with a CD. The latter findings underscore the high appreciation of the trust relationship between customers and pharmacists (Dölger 2021), which in traditional retail channels, i.e., BMPs, is particularly established and experienced through interpersonal contact.

The personality trait readiness to take risks enhances social risk perception in all purchase conditions. The reasons for this effect can be worth further investigation, especially for digitalized BMPs, where social risk is a significant barrier to purchase.

Of the experience-based control variables that we defined as familiarity with the conditions of purchase investigated, familiarity with BMPs in general showed predominantly increasing effects on risk types and a reducing effect on purchase intention in digitalized pharmacies. For BMPs with a DSD, it has an increasing effect on performance and psychological risks, but nevertheless also increases purchase intention, which may be related to the reducing effect on the social risk as a significant barrier to purchase in these pharmacies. Additionally, it increases purchase intention in BMPs with CDs. Familiarity with BMPs with DSDs shows a reducing effect on overall risk and consequently an increasing effect on purchase intention in BMPs with DSDs. Furthermore, familiarity with OPs increases overall risk perception in BMPs with DSDs, while decreasing perceived performance risk in these pharmacies. This could be an indication that the product presentation is perceived similarly in both digital buying situations. For OPs, familiarity with OPs decreases performance and privacy risk and consequently increases purchase intention, as both types of risk are significant barriers to purchasing in OPs. In summary, familiarity with a purchasing situation has a positive influence on purchase intention in each of these purchasing conditions.

CRITICAL EVALUATION OF THE MAIN FINDINGS

The hypotheses on psychological, financial, and privacy risks are supported for the comparison of digitalized BMPs with OPs, whereas the hypotheses on performance, physical, and social risks are rejected. Similarly, only the hypotheses for financial and privacy risk are upheld for the comparison between non-digitalized and digitalized BMPs.

Starting with the hypothesis on performance risk, which stated that due to increased mental tangibility, the risk in BMPs with a DSD could be perceived as lower than in BMPs with a CD, which turned out to have the opposite effect. Since the mental tangibility on the internet increases by huge product information access (Eggert 2006), we drew on similarities between the presentation on DSDs and OPs. An explanation for this opposite effect may be that mental tangibility did not increase as hypothesized or that other effects contributed to the result, which we have not considered. Similar arguments are valid for the different results in the perceived physical risk. This risk type addresses the harm to health due to the product and its presentation, which includes expired products and incorrect product information. We based our hypothesis predominantly on considerations of the purchase situation and on former study results gained in an investigation in pharmacy salesrooms (Ersöz and Schröder 2022). Subsequently, the question arises why these results are different. An explanation could be that the pharmacy store environment in the former study produced a different perception than the images presented in this online evaluation. Moreover, a social desirability bias can be ruled out for the current results but hardly for the former results because participants were interviewed on the sales floor of pharmacies (Krumpal 2013). The third hypothesis on social risk could not be supported for the comparison of BMPs with a DSD, despite the possible discrepancy with traditional values in the pharmacy business and the image change due to digitalization, which could lead to rejection by the social reference group. The results only showed that social risks are perceived significantly higher in OPs than in BMPs with CD, but both at a low level. This result may be influenced by personal counseling and the highly valued relationship of trust with pharmacists among BMPs (Mortimer 2018; Mortimer et al. 2019; Dölger 2021), which may be an influencing factor for confirmation by social reference groups. Interestingly, there is no difference between OPs and BMPs with a DSD. Because social risk has a significant impact on overall risk only for BMPs, but not for OPs, and is also the only risk type that contributes significantly to overall risk for digitalized BMPs, future studies should examine this risk type more intensively to examine the reasons and remedies for this barrier to purchase in digitalized pharmacies.

Coming to other interesting findings, most of the risk types are perceived equally in BMPs with a DSD compared to OPs. Implementing DSDs in BMPs can therefore be seen as a risk increase over the baseline (CD), which puts them roughly on par with OPs. Increased risk perception when shopping online compared to shopping in stores has already been demonstrated in other studies (Bezes 2016). These results extend the knowledge about the use of digital sales tools in stores, as they show that DSD increases risk perception to almost the same level as online shopping. In OPs, individuals are more concerned that their data will be disclosed than in digitalized BMPs. In addition, OPs score better in terms of financial risk. In sum, BMPs with a DSD do not appear to offer an advantage over OPs when concluding from the comparison of these risk types.

The further results on the structure of the perceived overall risk show that all risk types except financial risk contribute to the overall risk in at least one of the three presentation types, but significant risk types differ considerably between the presentation types. Similar results were found in studies that compared BMPs with supermarkets (Mortimer 2018; Mortimer et al. 2019). Our findings imply that even for the nearly identical study subjects, perceived purchase risk can vary widely in composition. However, the nonsignificant relationships between the risk types and overall risk do not mean that the hypothesis tests are meaningless, because each risk type yielded values above zero, implying risk is present. Rather, the results show to what extent these risk types, which are second-order contributors to purchase intention, can represent the latent construct of overall purchase risk. However, future investigations should consider further risk types, such as time risk, which might have an impact on the perceived overall risk. Although the financial risk is not a significant contributor to the overall perception of risk under the purchase conditions studied, eliminating this type of risk could be a mistake in the face of market and price changes.

LIMITATIONS

Predominantly younger-aged people participated in the study with a fairly low income. Additionally, the gender distribution was not well-balanced with only 2% non-binary participants and 68% females. These described skewness's are a well-known problem in social science (O'Rourke and Lakner 1989). To compensate for these skewness's, weighting methods were considered to calculate the effects, but due to the distortion that can also result from this, they were not used. Particularly in the age and gender groups, weighting to better reflect the smaller groups in the results can lead to individual opinions being given too much weight and thus very strongly distorting the results (Field 2018; Riepl 12.03.2012; Gabler and Ganninger 2010). The effects of familiarity must be considered under the limitation that we do not know what experience they are based on, and the pharmacy market is very heterogeneous.

IMPLICATIONS FOR PRACTICE

The answer to the question of whether to use a digital signage display for OTC drugs is twofold. On the one hand, clearly perceived purchase risks are predominantly higher when using a digital display compared to the conventional shelf presentation method. Purchase intention is also lower in digitalized pharmacies than in non-digitalized ones. Nevertheless, increasing familiarity with pharmacies that use digital signage displays decreases the overall risk perception and increases the purchase intention in those pharmacies. Additionally, familiarity with BMPs in general increases the purchase intention in digitalized BMPs. This indicates that digital signage displays may be more preferred in brick-and-mortar retail. Moreover, the only purchase barrier in pharmacies equipped with digital signage displays is found to be the social risk which is perceived as low and shows no differences compared to the other pharmacy types. From these results, it can be concluded that there are reasons that oppose the adoption of digital signage displays on the sales floor of pharmacies, but these reasons could change or disappear as customers become increasingly familiar with digitalized pharmacies.

CONCLUSION

Customers will continue to shop at both non-digitalized and digitalized brick-and-mortar pharmacies, as well as online pharmacies in Germany. The current study sows that customers' intentions to purchase medicines in the forms of presentation and distribution studied are related to their perceived degree of risk. Perceptions of social risk proved to be a barrier to purchasing over-the-counter drugs when presented on digital signage displays, although this was the only risk type perceived at a low level. The performance, psychological, physical, financial, and privacy risk types are rated high for digitalized OTC displays, which is higher than for conventional displays and at the same level as online pharmacies. Digitalized brick-and-mortar pharmacies score lower than online pharmacies on privacy risk, but higher when it comes to financial risk. For non-digitalized pharmacies, the physical, social, and privacy risk types have been identified as barriers to the purchase. In online pharmacies, barriers are performance, psychological, and privacy risk types. All in all, this study shows that perceived risks from digital signage displays are quite high and that trust towards pharmacies and familiarity effects can be considered when deciding to adopt digital signage displays. This study contributes to a better understanding of purchasing barriers for non-prescription drugs depending on their presentation from the customer's perspective.

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ANNEX 1: RELATED LITERATURE OVERVIEW

Study	**Objectives**	Channel (internet: i, retailer: r)	**Investigated Risk Types**	**Relevant Findings**
Jarvenpaa and Todd (1997)	Examines the risk types in internet shopping via open-ended questionnaires	i	Financial (Economic), Performance, Psychological (Personal), Social, Privacy	Performance and personal risks (credit card loss) are identified key factors for internet shopping.
Ashford et al. (2000)	Compares health services with goods and general services regarding perceived risk types	r	Financial, Physical, Psychological, Social, Convenience (Time)	Health services show increased social and psychological risks.
Forsythe and Shi (2003)	Examines perceived risk's impact on e-commerce adoption. Compares browsers, moderate shoppers, and heavy shoppers	i	Financial, Product, Performance, Psychological, Time	Except for performance risk, other risk types' perceptions decrease with increasing experience. Performance risk is perceived higher by moderate shoppers than by browsers.
Laroche (2004)	Examines the impact of mental, physical, and general intangibility on perceived fisk for brands and non-branded goods, and goods and services		Financial, Performance, Psychological, Social, Time	Only mental intangibility is significantly correlated with financial, performance, psychological, social, and time risk. The relationship between intangibility and perceived risk is stronger for brands than for non-branded goods. Physical intangibility is more strongly associated with perceived risk for goods as opposed to services. As services are usually physically intangible, this feature does not have a direct impact on perceived risk.
Eggert (2006)	Effects of Intangibility on the perceived risk in online vs. in-store shopping for branded vs. generic products	i.r	Financial, Performance, Psychological, Social, Time	Except for social risk, the other risk types were perceived as higher online than offline. The Internet was found to lessen the influence of intangibility on perceived risk due to the fact that it provides a large amount of product-related information, which in return helps the consumer to better visualize and understand the products.
Büttner et al. (2006)	Examines for high/low-risk medicines and high/low-risk online pharmacies effects on likelihood and magnitude of perceived risks	i	Privacy, Time, Performance, Financial, Time	High retailer risk influences the likelihood of negative outcomes. High product risk influences the magnitude. Loss of medical privacy and time risks are heightened for high-risk products. High-risk products induced a high search for information.
Büttner, Göritz (2008)	Examines the relation of trustworthiness and perceived risk on purchase intention in online pharmacies	i	not specified	Increasing perceived risk lowers purchase intention. The relation is partially mediated by the decrease in the perceived trustworthiness of the seller. Moreover, the effect of perceived risk on purchase intention is smaller than the effect of perceived trustworthiness.

Study	**Objectives**	Channel (internet: i, retailer: r)	**Investigated Risk Types**	**Relevant Findings**
Crespo et al. (2009)	Compares online non-buyers and buyers perceived risk in Internet shopping and purchase intention	i	Financial, Performance, Psychological, Social, Time, Privacy	All included risk types are relevant for online shopping. In both groups, financial and performance risks are the most relevant risk types for future purchase intention. Social risk is less significant for non-buyers than buyers.
Rozano Suplet et al. (2009)	Examines the risk types' relation and importance for overall risk perception for generic drugs in Spain	r	Financial, Performance, Physical, Psychological, Social, Time	For the purchase of generic drugs, time risk does not influence overall risk. Physical, social, performance, and financial risks are mediated through psychological risk. Psychological and physical risk directly impact overall risk perception.
Abzakh et al. (2013)	Investigates the risk types relation and importance for customer resistance towards generic drugs in Malaysia	r	Financial, Performance, Physical, Psychological, Social, Time	Performance and physical risk positively influence the resistance toward generic drugs.
Nepomuceno et al. (2014)	Effects of intangibility on perceived risk for several products with manipulation for mental and physical tangibility		Performance, Time, Financial	Over all products, the perceived risks were less in the mental tangible condition than in the physical tangible condition.
Yin (2016)	Investigates the adoption of online pharmacies against the background of perceived risk, trust, and further potential drivers in China	i	not specified	Perceived trust and perceived risk directly influence consumers' adoption intention of online medicine purchases, while perceived trust has a significant negative influence on perceived risk.
Sabbir et al. (2020)	Examines the determinants of online pharmacy adoption in Bangladesh	i	not specified	Perceived risk has no significant impact on online pharmacy adoption in Bangladesh for the young generation of buyers.
Jharap (2017)	Examines perceived risks influence on attitude toward generic OTC drugs		Financial, Performance, Physical	Financial risk negatively influences the attitude toward generic OTC drugs.
Mortimer (2018)	Identifies risk types for the purchase of OTC drugs in supermarkets in Australia	r	Physical, Psychological, Social, Time	Psychological and social risks lowered customers' purchase intention in supermarkets.
Mortimer (2019)	Compares BMPs with supermarkets for the purchase of OTC drugs in Australia	r	Physical, Psychological, Social, Time	Physical and social risk lowered purchase intention in supermarkets. Time risk negatively influenced the purchase intention in BMPs.
Sapic et al. (2019)	Identifies factors for loyalty in purchasing OTC drugs	r	not specified	The greater the perceived risk toward OTC drugs the higher the loyalty towards familiar drugs.
Santos (2021)	Explores the drivers and barriers of online pharmacy adoption in Portugal via a mixed-methods approach	i	not specified	Barriers to the online purchase of medication were found to be the lack of knowledge of the service, lack of trust, and lack of advice on products and their use.

Study	**Objectives**	Channel (internet: i, retailer: r)	**Investigated Risk Types**	**Relevant Findings**
Ma (2021)	Examines the influence of trustworthiness, perceived risk, and consumer traits on non-adopters intention to use online pharmacies	i	not specified	Perceived risk negatively affects trustworthiness but has no impact on the use intention of non-adopters.